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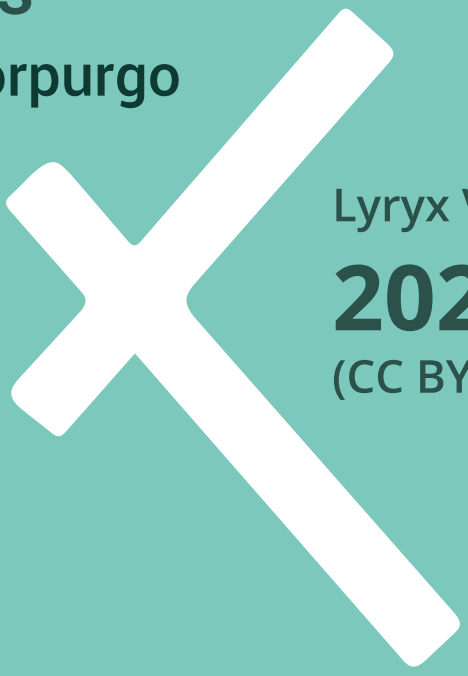
# Introduction to Financial Accounting

D. Annand & H. Dauderis
Adapted by T. Jensen & M. Morpurgo



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# Introduction to Financial Accounting

by Henry Dauderis & David Annand
Adapted by T. Jensen & M. Morpurgo

Version 2023 — Revision A

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# Introduction to Financial Accounting

Version 2023 — Revision A

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# Introduction to Financial Accounting

by Henry Dauderis & David Annand
Adapted by T. Jensen & M. Morpurgo

## Base Text Revision History

**Current Revision: Version 2023 — Revision A**

| | |
|---|---|
| 2023 A | • Minor content fixes throughout.<br>• Refresh of years used in dates throughout in examples, exercises, and problems.<br>• Problem 2-6 revised. |
| 2021 A | • Front matter has been updated including cover, Lyryx with Open Texts, copyright, and revision pages. Attribution page has been added. |
| 2019 B | • Minor content fixes throughout. |
| 2019 A | • Content added on direct method cash flows.<br>• Links to videos have been added throughout the chapters. |
| 2018 A | • Minor content fixes throughout. |
| 2017 C | • Content added on book values with multiple share classes (Section 10.6). |
| 2017 B | • Content added on special journals and subledgers in Section 2.4. |
| 2017 A | • Additional exercises added throughout the text.<br>• Content added on detailed income statements with continuing and discontinued operations and EPS calculations (Section 11.4).<br>• Content added on bond retirement and interest accrual when bonds issued between interest payment dates (Appendix to Chapter 9).<br>• Content added on share retirement to Section 10.2. |

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# Chapter 1

# Introduction to Financial Accounting

Accounting involves a process of collecting, recording, and reporting a business's economic activities to users. It is often called the language of business because it uses a unique vocabulary to communicate information to decision makers. To understand accounting, we first look at the basic forms of business organizations. The concepts and principles that provide the foundation for financial accounting are then discussed. With an emphasis on the corporate form of business organization, we will examine how we communicate to users of financial information using financial statements. Finally, we will review how financial transactions are analyzed and then reported on financial statements.

## Chapter 1 Learning Objectives

LO1 – Define accounting.

LO2 – Identify and describe the forms of business organization.

LO3 – Identify and explain the Generally Accepted Accounting Principles (GAAP).

LO4 – Identify, explain, and prepare the financial statements.

LO5 – Analyze transactions by using the accounting equation.

## Concept Self-Check

Use the following as a self-check while working through Chapter 1.

1. What is accounting?
2. What is the difference between internal and external users of accounting information?
3. What is the difference between managerial and financial accounting?
4. What is the difference between a business organization and a non-business organization?
5. What are the three types of business organizations?
6. What is a PAE? A PE?

7. What does the term *limited liability* mean?
8. Explain how ethics are involved in the practice of accounting.
9. Describe what GAAP refers to.
10. Identify and explain the six qualitative characteristics of GAAP.
11. Identify and explain at least five of the nine principles that support the GAAP qualitative characteristics.
12. How is financial information communicated to external users?
13. What are the four financial statements?
14. Which financial statement measures financial performance? Financial position?
15. What information is provided in the statement of cash flows?
16. Explain how retained earnings and dividends are related.
17. What are the three primary components of the balance sheet?
18. Equity consists of what two components?
19. How are assets financed?
20. Identify and explain the three types of activities a business engages in.
21. What are *notes to the financial statements*?
22. What is the accounting equation?
23. What are the distinctions among calendar, interim, and fiscal year ends?

**NOTE:** The purpose of these questions is to prepare you for the concepts introduced in the chapter. Your goal should be to answer each of these questions as you read through the chapter. If, when you complete the chapter, you are unable to answer one or more the Concept Self-Check questions, go back through the content to find the answer(s). Solutions are not provided to these questions.

## 1.1 Accounting Defined

LO1 – Define accounting.

**Accounting** is the process of identifying, measuring, recording, and communicating an organization's economic activities to users. Users need information for decision making. **Internal users** of accounting information work for the organization and are responsible for planning, organizing, and operating the entity. The area of accounting known as **managerial accounting** serves the decision-making needs of internal users. External users do not work for the organization and include investors, creditors, labour unions, and customers. **Financial accounting** is the area of accounting that focuses on external reporting and meeting the needs of external users. This book addresses financial accounting. Managerial accounting is covered in other books.

## 1.2 Business Organizations

LO2 – Identify and describe the forms of business organization.

An **organization** is a group of individuals who come together to pursue a common set of goals and objectives. There are two types of business organizations: *business* and *non-business*. A **business organization** sells products and/or services for profit. A **non-business organization**, such as a charity or hospital, exists to meet various societal needs and does not have profit as a goal. All businesses, regardless of type, record, report, and, most importantly, *use* accounting information for making decisions.

This book focuses on business organizations. There are three common forms of business organizations — a *proprietorship*, a *partnership*, and a *corporation*.

### Proprietorship

A **proprietorship** is a business owned by one person. It is not a separate legal entity, which means that the business and the owner are considered to be the same entity. This means, for example, that from an income tax perspective, the profits of a proprietorship are taxed as part of the owner's personal income tax return. **Unlimited liability** is another characteristic of a sole proprietorship meaning that if the business could not pay its debts, the owner would be responsible even if the business's debts were greater than the owner's personal resources.

## Partnership

A **partnership** is a business owned by two or more individuals. Like the proprietorship, it is not a separate legal entity and its owners are typically subject to unlimited liability.

## Corporation

A **corporation** is a business owned by one or more owners. The owners are known as *shareholders*. A **shareholder** owns shares of the corporation. **Shares**[1] are units of ownership in a corporation. For example, if a corporation has 1,000 shares, there may be three shareholders where one has 700 shares, another has 200 shares, and the third has 100 shares. The number of shares held by a shareholder represents how much of the corporation they own. A corporation can have different types of shares; this topic is discussed in a later chapter. When there is only one type of share, it is usually called **common shares**.

A corporation's shares can be privately held or available for public sale. A corporation that holds its shares privately and does not sell them publicly is known as a **private enterprise (PE)**. A corporation that sells its shares publicly, typically on a stock exchange, is called a **publicly accountable enterprise (PAE)**.

Unlike the proprietorship and partnership, a corporation is a separate legal entity. This means, for example, that from an income tax perspective, a corporation files its own tax return. The owners or shareholders of a corporation are not responsible for the corporation's debts so have **limited liability** meaning that the most they can lose is what they invested in the corporation.

In larger corporations, there can be many shareholders. In these cases, shareholders do not manage a corporation but participate indirectly through the election of a **Board of Directors**. The Board of Directors does not participate in the day-to-day management of the corporation but delegates this responsibility to the officers of the corporation. An example of this delegation of responsibility is illustrated in Figure 1.1.

[1] Shares are also called **stock**.

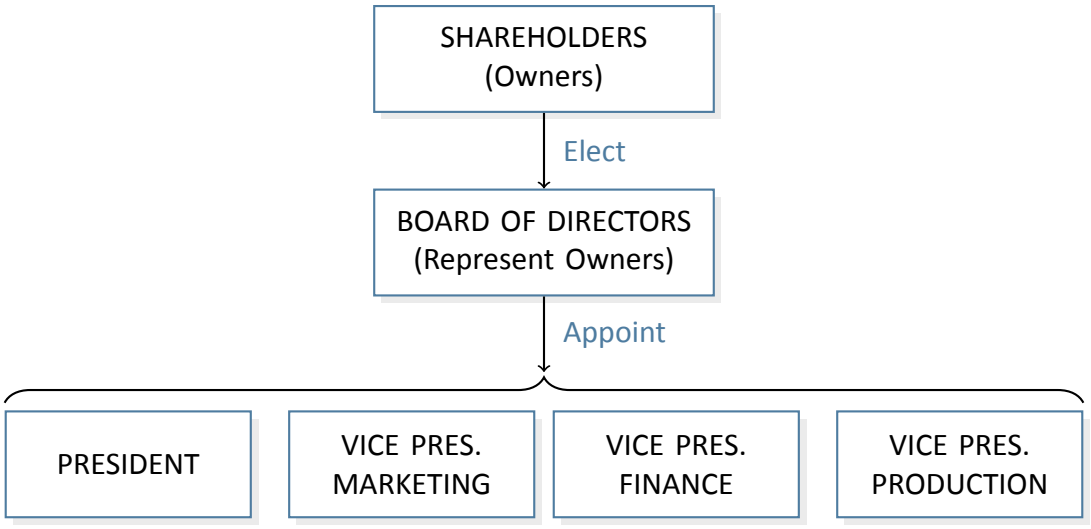
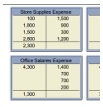



**Figure 1.1: Generalized Form of a Corporate Organization**

Shareholders usually meet annually to elect a Board of Directors. The Board of Directors meets regularly to review the corporation's operations and to set policies for future operations. Unlike shareholders, directors can be held personally liable if a company fails.

***The focus of these chapters will be on the corporate form of business organization.*** The proprietorship and partnership organizations will be discussed in more detail in Chapter 13.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Forms of Organization.

## 1.3 Generally Accepted Accounting Principles (GAAP)

LO3 – Identify and explain the Generally Accepted Accounting Principles (GAAP).

The goal of accounting is to ensure information provided to decision makers is useful. To be useful, information must be relevant and faithfully represent a business's economic activities. This requires **ethics**, beliefs that help us differentiate right from wrong, in the application of underlying accounting concepts or principles. These underlying accounting concepts or principles are known as **Generally Accepted Accounting Principles (GAAP)**.

GAAP in Canada, as well as in many other countries, is based on International Financial Reporting Standards (IFRS) for publicly accountable enterprises (PAE). IFRS are issued by the **International Accounting Standards Board (IASB)**. The IASB's mandate is to promote the adoption of a single set of global accounting standards through a process of open and transparent discussions among cor-

porations, financial institutions, and accounting firms around the world. Private enterprises (PE) in Canada are permitted to follow either IFRS or **Accounting Standards for Private Enterprises (ASPE)**, a set of less onerous GAAP-based standards developed by the Canadian Accounting Standards Board (AcSB). The **AcSB** is the body that governs accounting standards in Canada. ***The focus in this book will be on IFRS for PAEs***[2].

Accounting practices are guided by GAAP which are comprised of qualitative characteristics and principles. As already stated, relevance and faithful representation are the primary qualitative characteristics. Comparability, verifiability, timeliness, and understandability are additional qualitative characteristics.

Information that possesses the quality of:

- **relevance** has the ability to make a difference in the decision-making process.
- **faithful representation** is complete, neutral, and free from error.
- **comparability** tells users of the information that businesses utilize similar accounting practices.
- **verifiability** means that others are able to confirm that the information faithfully represents the economic activities of the business.
- **timeliness** is available to decision makers in time to be useful.
- **understandability** is clear and concise.

Table 1.1 lists the nine principles that support these qualitative characteristics.

[2]It should be noted, however, that at the introductory level, there are no significant differences in how IFRS and ASPE are applied.

| Accounting Principle | Explanation/Example |
|---|---|
| Business entity | Requires that each economic entity maintain separate records.<br><br>Example: A business owner keeps separate accounting records for business transactions and for personal transactions. |
| Consistency | Requires that a business use the same accounting policies and procedures from period to period.<br><br>Example: A business uses a particular inventory costing method. It cannot change to a different inventory costing method in the next accounting period. |
| Cost | Requires that each economic transaction be based on the actual original cost (also known as historical cost principle).<br><br>Example: The business purchases a delivery truck advertised for $75,000 and pays $70,000. The truck must be recorded at the cost of $70,000, the amount actually paid. |
| Full disclosure | Requires that accounting information communicate sufficient information to allow users to make knowledgeable decisions.<br><br>Example: A business is applying to the bank for a $1,000,000 loan. The business is being sued for $20,000,000 and it is certain that it will lose. The business must tell the bank about the lawsuit even though the lawsuit has not yet been finalized. |
| Going concern | Assumes that a business will continue for the foreseeable future.<br><br>Example: All indications are that Business X will continue so it is reported to be a 'going concern'. Business Z is being sued for $20,000,000 and it is certain that it will lose. The $20,000,000 loss will force the business to close. Business Z must not only disclose the lawsuit but it must also indicate that there is a 'going concern' issue. |
| Matching | Requires that financial transactions be reported in the period in which they occurred/were realized.<br><br>Example: Supplies were purchased March 15 for $700. They will be recorded as an asset on March 15 and then expensed as they are used. |

| Accounting Principle | Explanation/Example |
|---|---|
| Materiality | Requires a business to apply proper accounting only for items that would affect decisions made by users.<br><br>Example: The business purchases a stapler for $5 today. Technically, the stapler will last several years so should be recorded as an asset. However, the business will record the $5 as an expense instead because depreciating a $5 item will not impact the decisions of financial information. |
| Monetary unit | Requires that financial information be communicated in stable units of money.<br><br>Example: Land was purchased in 1940 for $5,000 Canadian. It is maintained in the accounting records at $5,000 Canadian and is not adjusted. |
| Recognition | Requires that revenues be recorded when earned and expenses be recorded when incurred, which is not necessarily when cash is received (in the case of revenues) or paid (in the case of expenses).<br><br>Example: A sale occurred on March 5. The customer received the product on March 5 but will pay for it on April 5. The business records the sale on March 5 when the sale occurred even though the cash is not received until April 5. |

**Table 1.1: Accounting Principles**

Note: Some of the principles discussed above may be challenging to understand because related concepts have not yet been introduced. Therefore, most of these principles will be discussed again in more detail in a later chapter.

## 1.4 Financial Statements

LO4 – Identify, explain, and prepare the financial statements.

Recall that financial accounting focuses on communicating information to external users. That information is communicated using ***financial statements***. There are four financial statements: the income statement, statement of changes in equity, balance sheet, and statement of cash flows. Each of these is introduced in the following sections using an example based on a fictitious corporate organization called Big Dog Carworks Corp.

## The Income Statement

An **income statement** communicates information about a business's financial performance by summarizing **revenues** less **expenses** over a period of time. Revenues are created when a business provides products or services to a customer in exchange for assets. Assets are resources resulting from past events and from which future economic benefits are expected to result. Examples of assets include cash, equipment, and supplies. Assets will be discussed in more detail later in this chapter. Expenses are the assets that have been used up or the obligations incurred in the course of earning revenues. When revenues are greater than expenses, the difference is called **net income** or **profit**. When expenses are greater than revenue, a **net loss** results.

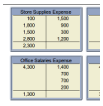
Consider the following income statement of Big Dog Carworks Corp. (BDCC). This business was started on January 1, 2023 by Bob "Big Dog" Baldwin in order to repair automobiles. All the shares of the corporation are owned by Bob.

At January 31, the income statement shows total revenues of $10,000 and various expenses totaling $7,800. Net income, the difference between $10,000 of revenues and $7,800 of expenses, equals $2,200.

| | | |
|---|---|---|
| Big Dog Carworks Corp. | | |
| Income Statement | | |
| For the Month Ended January 31, 2023 | | |
| *Revenues* | | |
| Repair revenues | | $10,000 |
| *Expenses* | | |
| Rent expense | $1,600 | |
| Salaries expense | 3,500 | |
| Supplies expense | 2,000 | |
| Fuel expense | 700 | |
| Total expenses | | 7,800 |
| Net income | | $2,200 |

The heading shows the name of the entity, the type of financial statement, and the period-in-time date.

The net income is transferred to the statement of changes in equity.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Income Statement.

## The Statement of Changes in Equity

The **statement of changes in equity** provides information about how the balances in Share capital and Retained earnings changed during the period. **Share capital** is a heading in the shareholders'

equity section of the balance sheet and represents how much shareholders have invested. When shareholders buy shares, they are investing in the business. The number of shares they purchase will determine how much of the corporation they own. The type of ownership unit purchased by Big Dog's shareholders is known as common shares. Other types of shares will be discussed in a later chapter. When a corporation sells its shares to shareholders, the corporation is said to be **issuing shares** to shareholders.

In the statement of changes in equity shown below, Share capital and Retained earnings balances at January 1 are zero because the corporation started the business on that date. During January, Share capital of $10,000 was issued to shareholders so the January 31 balance is $10,000.

**Retained earnings** is the sum of all net incomes earned by a corporation over its life, less any distributions of these net incomes to shareholders. Distributions of net income to shareholders are called **dividends**. Shareholders generally have the right to share in dividends according to the percentage of their ownership interest. To demonstrate the concept of retained earnings, recall that Big Dog has been in business for one month in which $2,200 of net income was reported. Additionally, $200 of dividends were distributed, so these are subtracted from retained earnings. Big Dog's retained earnings were therefore $2,000 at January 31, 2023 as shown in the statement of changes in equity below.

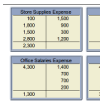
Big Dog Carworks Corp.
Statement of Changes in Equity
For the Month Ended January 31, 2023

The heading shows the name of the entity, the type of financial statement, and the period-in-time date.

| | *Share Capital* | *Retained Earnings* | *Total Equity* |
|---|---|---|---|
| Opening balance | $ -0- | $ -0- | $ -0- |
| Shares issued | 10,000 | | 10,000 |
| Net income | | 2,200 | 2,200 |
| Dividends | | (200) | (200) |
| Ending balance | $10,000 | $2,000 | $12,000 |

These totals are transferred to the balance sheet at January 31, 2023.

To demonstrate how retained earnings would appear in the next accounting period, let's assume that Big Dog reported a net income of $5,000 for February, 2023 and dividends of $1,000 were given to the shareholder. Based on this information, retained earnings at the end of February would be $6,000, calculated as the $2,000 January 31 balance plus the $5,000 February net income less the $1,000 February dividend. The balance in retained earnings continues to change over time because of additional net incomes/losses and dividends.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Statement of Changes in Equity.

## The Balance Sheet

The **balance sheet**, or **statement of financial position**, shows a business's assets, liabilities, and equity at a point in time. The balance sheet of Big Dog Carworks Corp. at January 31, 2023 is shown below.

Big Dog Carworks Corp.
Balance Sheet
At January 31, 2023

The heading shows the name of the entity, the type of financial statement, and the point-in-time date.

| | | | | |
|---|---|---|---|---|
| *Assets* | | *Liabilities* | | |
| Cash | $ 3,700 | Bank Loan | $ 6,000 | |
| Accounts receivable | 2,000 | Accounts payable | 700 | |
| Prepaid insurance | 2,400 | Unearned revenue | 400 | |
| Equipment | 3,000 | Total liabilities | | $ 7,100 |
| Truck | 8,000 | | | |
| | | *Equity* | | |
| | | Share capital | $10,000 | |
| | | Retained earnings | 2,000 | |
| | | Total equity | | 12,000 |
| Total assets | $19,100 | Total liabilities and equity | | $19,100 |

Total assets ($19,100 here) always equal Total liabilities ($7,100) plus Equity ($12,000).

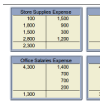
## What Is an Asset?

**Assets** are economic resources that provide future benefits to the business. Examples include cash, accounts receivable, prepaid expenses, equipment, and trucks. **Cash** is coins and currency, usually held in a bank account, and is a financial resource with future benefit because of its purchasing power. **Accounts receivable** represent amounts to be collected in cash in the future for goods sold or services provided to customers on credit. **Prepaid expenses** are assets that are paid in cash in advance and have benefits that apply over future periods. For example, a one-year insurance policy purchased for cash on January 1, 2023 will provide a benefit until December 31, 2023 so is a prepaid asset. The equipment and truck were purchased on January 1, 2023 and will

provide benefits for 2023 and beyond so are assets.

## What Is a Liability?

A **liability** is an obligation to pay an asset in the future. For example, Big Dog's bank loan represents an obligation to repay cash in the future to the bank. **Accounts payable** are obligations to pay a creditor for goods purchased or services rendered. A **creditor** owns the right to receive payment from an individual or business. **Unearned revenue** represents an advance payment of cash from a customer for Big Dog's services or products to be provided in the future. For example, Big Dog collected cash from a customer in advance for a repair to be done in the future.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Balance Sheet.

## What Is Equity?

**Equity** represents the net assets owned by the owners (the shareholders). **Net assets** are assets minus liabilities. For example, in Big Dog's January 31 balance sheet, net assets are $12,000, calculated as total assets of $19,100 minus total liabilities of $7,100. This means that although there are $19,100 of assets, only $12,000 are owned by the shareholders and the balance, $7,100, are financed by debt. Notice that net assets and total equity are the same value; both are $12,000. Equity consists of share capital and retained earnings. Share capital represents how much the shareholders have invested in the business. Retained earnings is the sum of all net incomes earned by a corporation over its life, less any dividends distributed to shareholders.

In summary, the balance sheet is represented by the equation: Assets = Liabilities + Equity. Assets are the investments held by a business. The liabilities and equity explain how the assets have been financed, or funded. Assets can be financed through liabilities, also known as **debt**, or equity. Equity represents amounts that are owned by the owners, the shareholders, and consists of share capital and retained earnings. Investments made by shareholders, namely share capital, are used to finance assets and/or pay down liabilities. Additionally, retained earnings, comprised of net income less any dividends, also represent a source of financing.

An exploration is available on the Lyryx site. Log into your Lyryx course to run Account Types.

### The Statement of Cash Flows (SCF)

Cash is an asset reported on the balance sheet. Ensuring there is sufficient cash to pay expenses and liabilities as they come due is a critical business activity. The **statement of cash flows (SCF)** explains how the balance in cash changed over a period of time by detailing the sources (inflows) and uses (outflows) of cash by type of activity: operating, investing, and financing, as these are the three types of activities a business engages in. **Operating activities** are the day-to-day processes involved in selling products and/or services to generate net income. Examples of operating activities include the purchase and use of supplies, paying employees, fuelling equipment, and renting space for the business. **Investing activities** are the buying of assets needed to generate revenues. For example, when an airline purchases airplanes, it is investing in assets required to help it generate revenue. **Financing activities** are the raising of money needed to invest in assets. Financing can involve issuing share capital (getting money from the owners known as shareholders) or borrowing. Figure 1.2 summarizes the interrelationships among the three types of business activities.

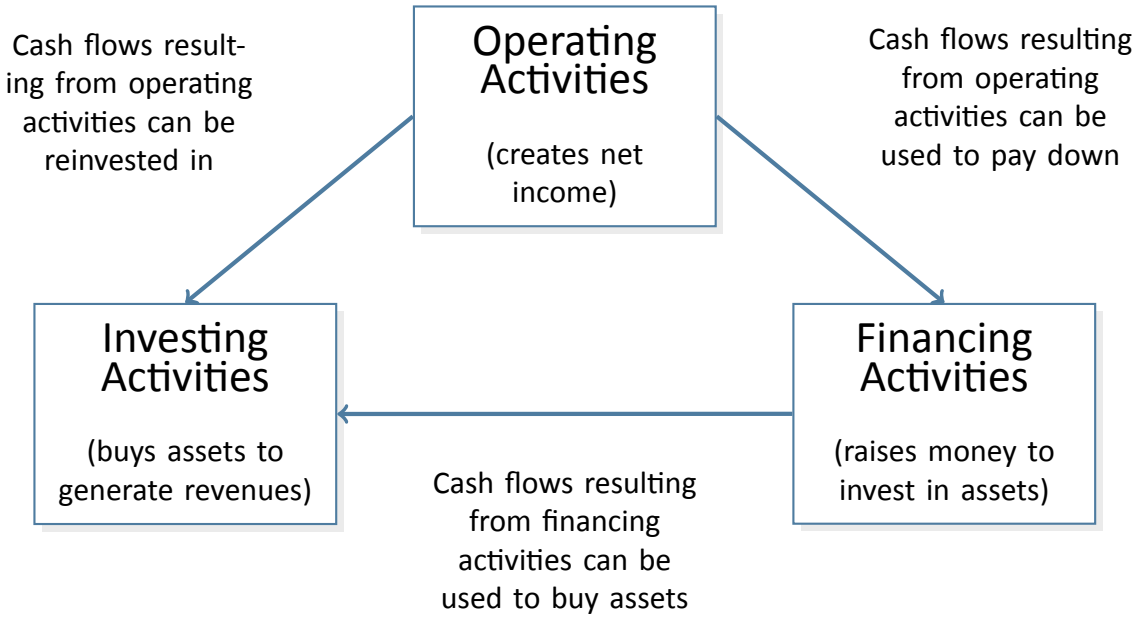



**Figure 1.2: Relationships Among the Three Types of Business Activities**

The statement of cash flows for Big Dog is shown below.

Big Dog Carworks Corp.
Statement of Cash Flows
For the Month Ended January 31, 2023

The heading shows the name of the entity, the type of financial statement, and the period-in-time date.

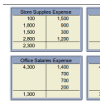
| | | |
|---|---|---|
| Operating activities: | | |
| Net income | $ 2,200 | |
| Adjustments: | | |
| Increase in unearned revenues | 400 | |
| Increase in accounts payable | 700 | |
| Increase in prepaid insurance | (2,400) | |
| Increase in accounts receivable | (2,000) | |
| Net cash used by operating activities | | $(1,100) |
| Investing activities: | | |
| Purchase of equipment | $(3,000) | |
| Purchase of truck | (3,000) | |
| Net cash used by investing activities | | (6,000) |
| Financing activities: | | |
| Issued shares | $10,000 | |
| Borrowed from bank | 3,000 | |
| Payment on bank loan | (2,000) | |
| Paid dividends | (200) | |
| Net cash provided by financing activities | | 10,800 |
| Net increase in cash | | 3,700 |
| Cash balance, January 1 | | -0- |
| Cash balance, January 31 | | $3,700 |

This agrees with the Cash amount shown on the Balance Sheet at January 31, 2023.

The statement of cash flows is useful because cash is one of the most important assets of a corporation. Information about expected future cash flows are therefore important for decision makers. For instance, Big Dog's bank manager needs to determine whether the remaining $6,000 loan can be repaid, and also whether or not to grant a new loan to the corporation if requested. The statement of cash flows helps inform those who make these decisions.

## Notes to the Financial Statements

An essential part of financial statements are the notes that accompany them. These notes are generally located at the end of a set of financial statements. The notes provide greater detail about various amounts shown in the financial statements, or provide non-quantitative information that is useful to users. For example, a note may indicate the estimated useful lives of long-lived assets, or loan repayment terms. Examples of note disclosures will be provided later.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Communicating Through Financial Statements.

## 1.5 Transaction Analysis and Double-entry Accounting

LO5 – Analyze transactions by using the accounting equation.

The **accounting equation** is foundational to accounting. It shows that the total assets of a business must always equal the total claims against those assets by creditors and owners. The equation is expressed as:

| ASSETS | = | LIABILITIES | + | EQUITY |
|---|---|---|---|---|
| (economic resources owned by an entity) | | (creditors' claims on assets) | | (owners' claims on assets) |

When financial transactions are recorded, combined effects on assets, liabilities, and equity are always exactly offsetting. This is the reason that the balance sheet always balances.

Each economic exchange is referred to as a **financial transaction** — for example, when an organization exchanges cash for land and buildings. Incurring a liability in return for an asset is also a financial transaction. Instead of paying cash for land and buildings, an organization may borrow money from a financial institution. The company must repay this with cash payments in the future. The accounting equation provides a system for processing and summarizing these sorts of transactions.

Accountants view financial transactions as economic events that change components within the accounting equation. These changes are usually triggered by information contained in **source documents** (such as sales invoices and bills from creditors) that can be verified for accuracy.

The accounting equation can be expanded to include all the items listed on the Balance Sheet of Big Dog at January 31, 2023, as follows:

| ASSETS | | | | | | LIABILITIES | | | | EQUITY | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Cash | + Accounts Receivable | + Prepaid Insurance | + Equipment | + Truck | = | Bank Loan | + Accounts Payable | + Unearned Revenue | + | Share Capital | + Retained Earnings |

If one item within the accounting equation is changed, then another item must also be changed to balance it. In this way, the equality of the equation is maintained. For example, if there is an

increase in an asset account, then there must be a decrease in another asset or a corresponding increase in a liability or equity account. This equality is the essence of *double-entry accounting*. The equation itself always remains in balance after each transaction. The operation of double-entry accounting is illustrated in the following section, which shows 10 transactions of Big Dog Carworks Corp. for January 2023.

| Transaction Number | Date | Description of Transaction | Effect on the Accounting Equation: ASSETS | = LIABILITIES | + EQUITY |
|---|---|---|---|---|---|
| 1 | Jan.1 | Big Dog Carworks Corp. issued 1,000 shares to Bob Baldwin, the owner or shareholder, for $10,000 cash.<br>The asset Cash is increased while the equity item Share Capital is also increased. The impact on the equation is:<br>CASH → +10,000<br>SHARE CAPITAL ⇢ +10,000 | | | |
| 2 | Jan.2 | Big Dog Carworks Corp. borrowed $3,000 from the bank and deposited the cash into the business's bank account.<br>The asset Cash is increased and the liability Bank Loan is also increased. The impact on the equation is:<br>CASH → +3,000<br>BANK LOAN ⇢ +3,000 | | | |
| 3 | Jan.2 | The corporation purchased $3,000 of equipment for cash.<br>There is an increase of the asset Equipment and a decrease to another asset, Cash. The impact on the equation is:<br>EQUIPMENT → +3,000<br>CASH → -3,000 | | | |
| 4 | Jan.2 | The corporation purchased a tow truck for $8,000, paying $3,000 cash and incurring an additional bank loan for the balance.<br>The asset Cash is decreased while the asset Truck is increased and the liability Bank Loan is also increased. The impact on the equation is:<br>CASH → -3,000<br>TRUCK → +8,000<br>BANK LOAN ⇢ +5,000 | | | |

| Transaction Number | Date | Description of Transaction | Effect on the Accounting Equation: ASSETS | = LIABILITIES | + EQUITY |
|---|---|---|---|---|---|
| 5 | Jan.5 | Big Dog Carworks Corp. paid $2,400 for a one-year insurance policy, effective January 1.<br>Here the asset Prepaid Insurance is increased and the asset Cash is decreased. The impact on the equation is:<br>PREPAID INSURANCE → +2,400<br>CASH → -2,400<br>Since the one-year period will not be fully used at January 31 when financial statements are prepared, the insurance cost is considered to be an asset at the payment date. The transaction does not affect liabilities or equity. | | | |
| 6 | Jan.10 | The corporation paid $2,000 cash to the bank to reduce the loan outstanding.<br>The asset Cash is decreased and there is a decrease in the liability Bank Loan. The impact on the equation is:<br>BANK LOAN ⇢ -2,000<br>CASH → -2,000 | | | |
| 7 | Jan.15 | The corporation received $400 as an advance payment from a customer for services to be performed in the future.<br>The asset Cash is increased by $400 and a liability, Unearned Revenue, is also increased since the revenue has not been earned as of January 15. It will be earned when the work is performed in the future. At January 31, these amounts are repayable to customers if the work is not done (and thus a liability). The impact on the equation is:<br>CASH → +400<br>UNEARNED REVENUE ⇢ +400 | | | |

| Transaction Number | Date | Description of Transaction | Effect on the Accounting Equation: ASSETS | = LIABILITIES | + EQUITY |
|---|---|---|---|---|---|
| 8 | Jan.20 | Automobile repairs of $10,000 were made for a customer; $8,000 of repairs were paid in cash and $2,000 of repairs will be paid in the future. Cash and Accounts Receivable assets of the corporation increase. The repairs are a revenue; revenue causes an increase in net income and an increase in net income causes an increase in equity. The impact on the equation is: | | | |
| | | CASH → | +8,000 | | |
| | | ACCOUNTS RECEIVABLE → | +2,000 | | |
| | | REPAIR REVENUE ⇢ | | | +10,000 |
| | | This activity increases assets and net income. | | | |
| 9 | Jan.31 | The corporation paid operating expenses for the month as follows: $1,600 for rent; $3,500 for salaries; and $2,000 for supplies expense. The $700 for truck operating expenses (e.g., oil, gas) was on credit. There is a decrease in the asset Cash. Expenses cause net income to decrease and a decrease in net income causes equity to decrease. There is an increase in the liability Accounts Payable. The impact on the equation is: | | | |
| | | RENT EXPENSE ⇢ | | | -1,600 |
| | | SALARIES EXPENSE ⇢ | | | -3,500 |
| | | SUPPLIES EXPENSE ⇢ | | | -2,000 |
| | | TRUCK OPERATING EXPENSE ⇢ | | | -700 |
| | | CASH → | -7,100 | | |
| | | ACCOUNTS PAYABLE ⇢ | | +700 | |
| 10 | Jan.31 | Dividends of $200 were paid in cash to the only shareholder, Bob Baldwin. Dividends cause retained earnings to decrease. A decrease in retained earnings will decrease equity. The impact on the equation is: | | | |
| | | DIVIDENDS ⇢ | | | -200 |
| | | CASH → | -200 | | |

These various transactions can be recorded in the expanded accounting equation as shown below:

| | ASSETS | | | | | = | LIABILITIES | | | + | EQUITY | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Trans. | Cash | + Acc. Rec. | + Prepaid Insur. | + Equip. | + Truck | = | Bank Loan | + Acc. Pay. | + Unearned Revenue | + | Share Capital | + Retained Earnings |
| 1. | +10,000 | | | | | | | | | | +10,000 | |
| 2. | +3,000 | | | | | | +3,000 | | | | | |
| 3. | -3,000 | | | +3,000 | | | | | | | | |
| 4. | -3,000 | | | | +8,000 | | +5,000 | | | | | |
| 5. | -2,400 | | +2,400 | | | | | | | | | |
| 6. | -2,000 | | | | | | -2,000 | | | | | |
| 7. | +400 | | | | | | | | +400 | | | |
| 8. | +8,000 | +2,000 | | | | | | | | | | +10,000 |
| 9. | -7,100 | | | | | | | +700 | | | | -1,600 |
| | | | | | | | | | | | | -3,500 |
| | | | | | | | | | | | | -2,000 |
| | | | | | | | | | | | | -700 |
| 10. | -200 | | | | | | | | | | | -200 |
| | 3,700 | + 2,000 | + 2,400 | + 3,000 | + 8,000 | = | 6,000 | + 700 | + 400 | + | 10,000 | + 2,000 |

These numbers are used to prepare the Income Statement.

**Figure 1.3: Transactions Worksheet for January 31, 2023**

Transactions in these columns are used to prepare the Statement of Changes in Equity.

Column totals are used to prepare the Balance Sheet.

ASSETS = $19,100

LIABILITIES + EQUITY = $19,100

Transactions summary:

1. Issued share capital for $10,000 cash.
2. Received a bank loan for $3,000.
3. Purchased equipment for $3,000 cash.
4. Purchased a truck for $8,000; paid $3,000 cash and incurred a bank loan for the balance.
5. Paid $2,400 for a comprehensive one-year insurance policy effective January 1.
6. Paid $2,000 cash to reduce the bank loan.
7. Received $400 as an advance payment for repair services to be provided over the next two months as follows: $300 for January, $100 for February.
8. Performed repairs for $8,000 cash and $2,000 on credit.
9. Paid a total of $7,100 for operating expenses incurred during the month; also incurred an expense on account for $700.
10. Dividends of $200 were paid in cash to the only shareholder, Bob Baldwin.

The transactions summarized in Figure 1.3 were used to prepare the financial statements described earlier, and reproduced in Figure 1.4 below.

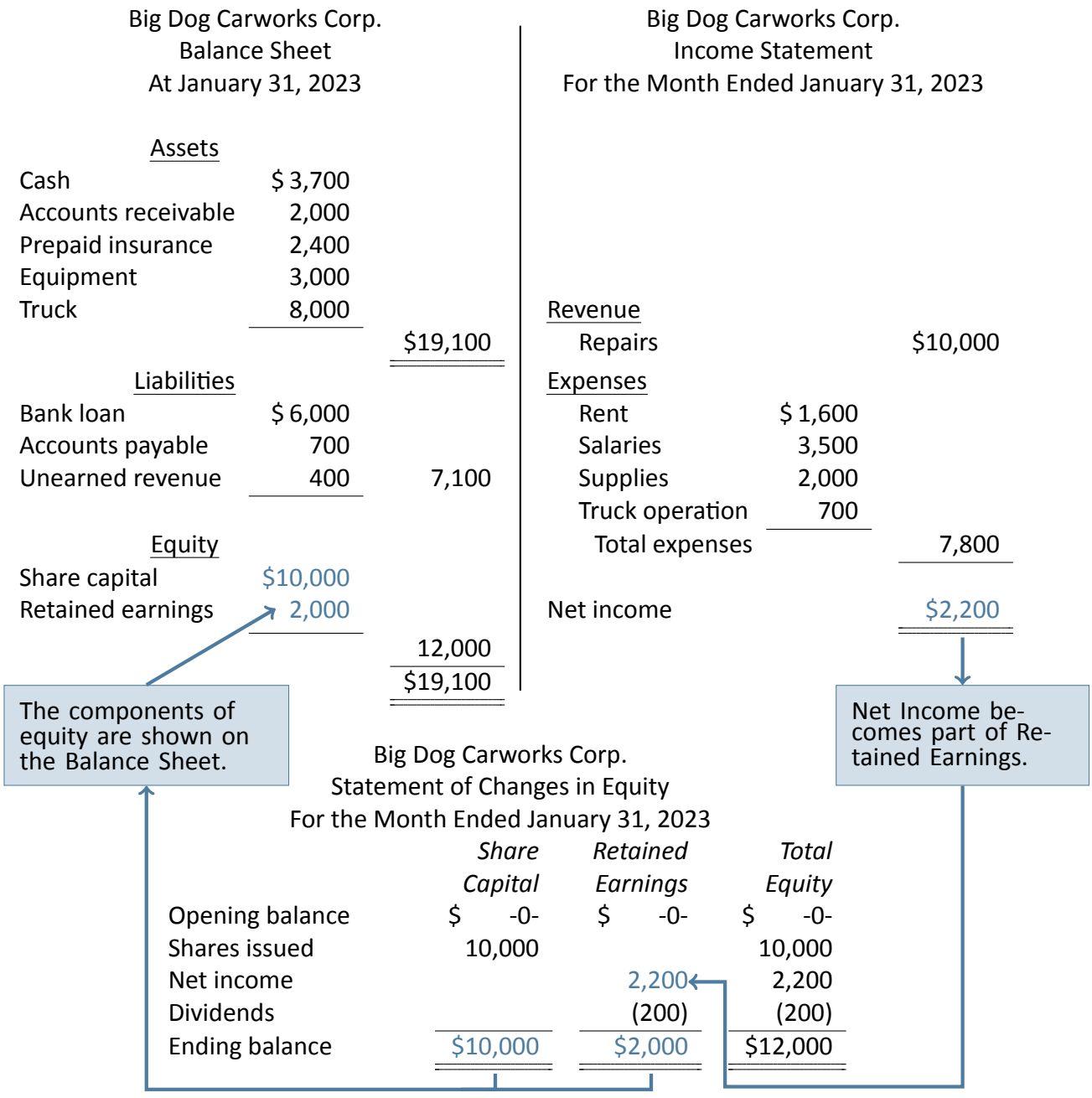



**Figure 1.4: Financial Statements of Big Dog Carworks Corp.**

## Accounting Time Periods

Financial statements are prepared at regular intervals — usually monthly or quarterly — and at the end of each 12-month period. This 12-month period is called the **fiscal year**. The timing of the financial statements is determined by the needs of management and other users of the financial statements. For instance, financial statements may also be required by outside parties,

such as bankers and shareholders. However, accounting information must possess the qualitative characteristic of timeliness — it must be available to decision makers in time to be useful — which is typically a minimum of once every 12 months.

Accounting reports, called the *annual financial statements*, are prepared at the end of each 12-month period, which is known as the **year-end** of the entity. Some companies' year-ends do not follow the calendar year (year ending December 31). This may be done so that the fiscal year coincides with their *natural year*. A **natural year** ends when business operations are at a low point. For example, a ski resort may have a fiscal year ending in late spring or early summer when business operations have ceased for the season.

Corporations listed on **stock exchanges** are generally required to prepare **interim financial statements**, usually every three months, primarily for the use of shareholders or creditors. Because these types of corporations are large and usually have many owners, users require more up-to-date financial information.

The relationship of the interim and year-end financial statements is illustrated in Figure 1.5.

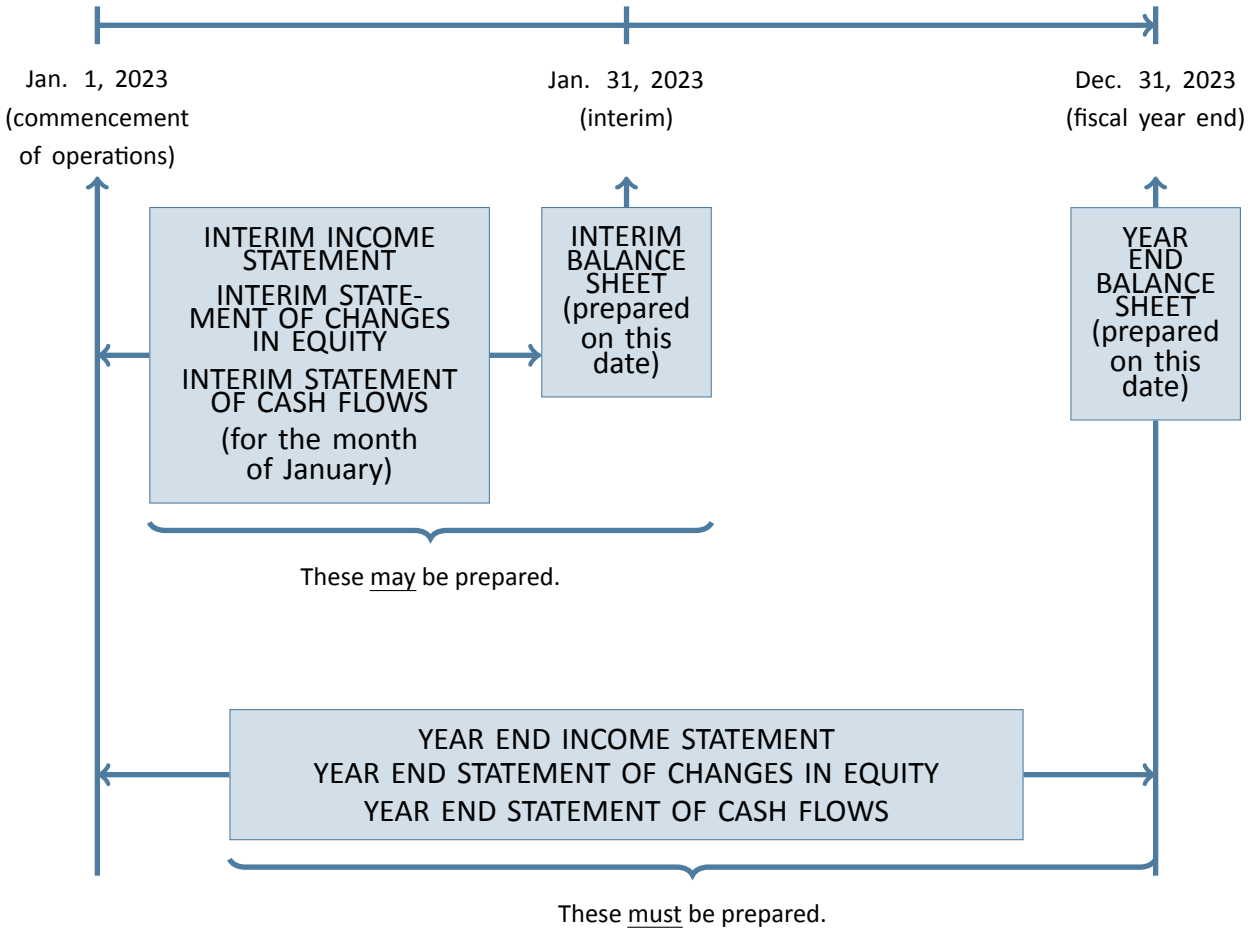
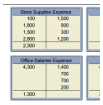



**Figure 1.5: Relationship of Interim and Year-end Financial Statements**



An exploration is available on the Lyryx site. Log into your Lyryx course to run Accounting Equation.

## Summary of Chapter 1 Learning Objectives

### LO1 – Define accounting.

Accounting is the process of identifying, measuring, recording, and communicating an organization's economic activities to users for decision making. Internal users work for the organization while external users do not. Managerial accounting serves the decision-making needs of internal users. Financial accounting focuses on external reporting to meet the needs of external users.

### LO2 – Identify and describe the forms of business organization.

The three forms of business organizations are a proprietorship, partnership, and corporation.

The following chart summarizes the key characteristics of each form of business organization.

| Characteristic | Proprietorship | Partnership | Corporation |
|---|---|---|---|
| Separate legal entity | No | No | Yes |
| Business income is taxed as part of the business | No[3] | No[4] | Yes |
| Unlimited liability | Yes | Yes | No |
| One owner permitted | Yes | No | Yes[5] |
| Board of Directors | No | No | Yes |

### LO3 – Identify and explain the Generally Accepted Accounting Principles (GAAP).

GAAP followed in Canada by PAEs (Publicly Accountable Enterprises) are based on IFRS (International Financial Reporting Standards). PEs (Private Enterprises) follow GAAP based on ASPE (Accounting Standards for Private Enterprises), a less onerous set of GAAP maintained by the AcSB (Accounting Standards Board). GAAP have qualitative characteristics (relevance, faithful representation, comparability, verifiability, timeliness, and understandability) and principles (business entity, consistency, cost, full disclosure, going concern, matching, materiality, monetary unit, and recognition).

[3]Business income is added to the owner's personal income and the owner pays tax on the sum of the two.
[4]Business income is added to the owner's personal income and the owner pays tax on the sum of the two.
[5]A corporation can have one or more owners.

### LO4 – Identify, explain, and prepare the financial statements.

The four financial statements are: income statement, statement of changes in equity, balance sheet, and statement of cash flows. The income statement reports financial performance by detailing revenues less expenses to arrive at net income/loss for the period. The statement of changes in equity shows the changes during the period to each of the components of equity: share capital and retained earnings. The balance sheet identifies financial position at a point in time by listing assets, liabilities, and equity. Finally, the statement of cash flows details the sources and uses of cash during the period based on the three business activities: operating, investing, and financing.

### LO5 – Analyze transactions by using the accounting equation.

The accounting equation, A = L + E, describes the asset investments (the left side of the equation) and the liabilities and equity that financed the assets (the right side of the equation). The accounting equation provides a system for processing and summarizing financial transactions resulting from a business's activities. A financial transaction is an economic exchange between two parties that impacts the accounting equation. The equation must always balance.

## Discussion Questions

1. What are generally accepted accounting principles (GAAP)?
2. When is revenue recognised?
3. How does the matching concept more accurately determine the Net Income of a business?
4. What are the qualities that accounting information is expected to have? What are the limitations on the disclosure of useful accounting information?
5. What are assets?
6. To what do the terms *liability* and *equity* refer?
7. Explain the term *financial transaction*. Include an example of a financial transaction as part of your explanation.
8. Identify the three forms of business organization.
9. What is the business entity concept of accounting? Why is it important?
10. What is the general purpose of financial statements? Name the four financial statements?

11. Each financial statement has a title that consists of the name of the financial statement, the name of the business, and a date line. How is the date line on each of the four financial statements the same or different?
12. What is the purpose of an income statement? a balance sheet? How do they interrelate?
13. Define the terms *revenue* and *expense*.
14. What is net income? What information does it convey?
15. What is the purpose of a statement of changes in equity? a statement of cash flows?
16. Why are financial statements prepared at regular intervals? Who are the users of these statements?
17. What is the accounting equation?
18. Explain double-entry accounting.
19. What is a year-end? How does the timing of year-end financial statements differ from that of interim financial statements?
20. How does a fiscal year differ from a calendar year?

## Exercises

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**EXERCISE 1–1 (LO1,2,3) Matching**

| | |
|---|---|
| Ethics | Managerial accounting |
| Financial accounting | Partnership |
| International Financial Reporting Standards | Separate legal entity |
| Limited liability | Unlimited liability |

**Required**: Match each term in the above alphabetized list to the corresponding description below.

**a.** _____ The owners pay tax on the business's net income.
**b.** _____ Accounting standards followed by PAEs in Canada.
**c.** _____ Rules that guide us in interpreting right from wrong.
**d.** _____ Accounting aimed at communicating information to external users.
**e.** _____ Accounting aimed at communicating information to internal users.
**f.** _____ The business is distinct from its owners.
**g.** _____ The owner(s) are not responsible for the debts of the business.
**h.** _____ If the business is unable to pay its debts, the owner(s) are responsible.

**EXERCISE 1–2 (LO3) Accounting Principles**

| | | |
|---|---|---|
| Business entity | Full disclosure | Materiality |
| Consistency | Going concern | Monetary unit |
| Cost | Matching | Recognition |

**Required**: Identify whether each of the following situations represents a violation or a correct application of GAAP, and which principle is relevant in each instance.

**a.** A small storage shed was purchased from a home supply store at a discount sale price of $5,000 cash. The clerk recorded the asset at $6,000, which was the regular price.

**b.** One of the business partners of a small architect firm continually charges the processing of his family vacation photos to the business firm.

**c.** An owner of a small engineering business, operating as a proprietorship from his home office, also paints and sells watercolour paintings in his spare time. He combines all the transactions in one set of books.

**d.** ABS Consulting received cash of $6,000 from a new customer for consulting services that ABS is to provide over the next six months. The transaction was recorded as a credit to revenue.

**e.** Tyler Tires, purchased a shop tool for cash of $20 to replace the one that had broken earlier that day. The tool would be useful for several years, but the transaction was recorded as a debit to shop supplies expense instead of to shop equipment (asset).

**f.** Embassy Lighting, a small company operating in Canada, sold some merchandise to a customer in California and deposited cash of $5,000 US. The bookkeeper recorded it as a credit to revenue of $7,250 CAD, which was the Canadian equivalent currency at that time.

**g.** An owner of a small car repair shop purchased shop supplies for cash of $2,200, which will be used over the next six months. The transaction was recorded as a debit to shop supplies (asset) and will be expensed as they are used.

**h.** At the end of each year, a business owner looks at his estimated net income for the year and decides which depreciation method he will use in an effort to reduce his business income taxes to the lowest amount possible.

**i.** XYZ is in deep financial trouble and recently was able to obtain some badly needed cash from an investor who was interested in becoming an equity partner. However, a few days ago, the investor unexpectedly changed the terms of his cash investment in XYZ company from the proposed equity partnership to a long-term loan. XYZ does not disclose this to their bank, who they recently applied to for an increase in their overdraft line-of-credit.

**EXERCISE 1–3 (LO4) Calculating Missing Amounts**

| | Assets | = | Liabilities | + | Equity |
|---|---|---|---|---|---|
| **a.** | 50,000 | = | 20,000 | + | ? |
| **b.** | 10,000 | = | ? | + | 1,000 |
| **c.** | ? | = | 15,000 | + | 80,000 |

**Required**: Calculate the missing amounts in **a**, **b**, and **c** above. Additionally, answer each of the questions in **d** and **e** below.

**d.** Assets are financed by debt and equity. The greatest percentage of debt financing is reflected in **a**, **b**, or **c**?

**e.** The greatest percentage of equity financing is reflected in **a**, **b**, or **c**?

**EXERCISE 1–4 (LO4) Calculating Missing Amounts**

**Required**: Calculate the missing amounts for companies *A* to *E*.

| | *A* | *B* | *C* | *D* | *E* |
|---|---|---|---|---|---|
| Cash | $3,000 | $1,000 | $ ? | $6,000 | $2,500 |
| Equipment | 8,000 | 6,000 | 4,000 | 7,000 | ? |
| Accounts Payable | 4,000 | ? | 1,500 | 3,000 | 4,500 |
| Share Capital | 2,000 | 3,000 | 3,000 | 4,000 | 500 |
| Retained Earnings | ? | 1,000 | 500 | ? | 1,000 |

**EXERCISE 1–5 (LO4) Calculating Missing Amounts**

| | Assets | = | Liabilities | + | Equity |
|---|---|---|---|---|---|
| Balance, Jan. 1, 2023 | $50,000 | | $40,000 | | ? |
| Balance, Dec. 31, 2023 | 40,000 | | 20,000 | | ? |

**Required**: Using the information above, calculate net income under each of the following assumptions.

**a.** During 2023, no share capital was issued and no dividends were declared.

**b.** During 2023, no share capital was issued and dividends of $5,000 were declared.

**c.** During 2023, share capital of $12,000 was issued and no dividends were declared.

**d.** During 2023, share capital of $8,000 was issued and $12,000 of dividends were declared.

---

**EXERCISE 1–6 (LO4) Identifying Assets, Liabilities, Equity Items**

**Required**: Indicate whether each of the following is an asset (A), liability (L), or an equity (E) item.

**a.** Accounts Payable
**b.** Accounts Receivable
**c.** Bank Loan Payable
**d.** Building
**e.** Cash
**f.** Share Capital
**g.** Loan Payable
**h.** Office Supplies
**i.** Prepaid Insurance
**j.** Utilities Expense
**k.** Dividends
**l.** Interest Receivable
**m.** Retained Earnings
**n.** Interest Revenue
**o.** Interest Payable
**p.** Interest Expense
**q.** Prepaid Insurance
**r.** Insurance Expense
**s.** Insurance Revenue
**t.** Machinery

---

**EXERCISE 1–7 (LO4) Calculating Financial Statement Components**

The following information is taken from the records of Jasper Inc. at January 31, 2023, after its first month of operations. Assume no dividends were declared in January.

| | |
|---|---|
| Cash | $33,000 |
| Accounts Receivable | 82,000 |
| Unused Supplies | 2,000 |
| Land | 25,000 |
| Building | 70,000 |

| | |
|---|---|
| Equipment | $30,000 |
| Bank Loan | 15,000 |
| Accounts Payable | 27,000 |
| Share Capital | ? |
| Net Income | 40,000 |

**Required**:

**a.** Calculate total assets.

**b.** Calculate total liabilities.

**c.** Calculate share capital.

**d.** Calculate retained earnings.

**e.** Calculate total equity.

---

**EXERCISE 1–8 (LO4) Net Income, Shares Issued**

| | |
|---|---|
| Accounts Receivable | $4,000 |
| Accounts Payable | 5,000 |
| Cash | 1,000 |
| Equipment | 8,000 |
| Insurance Expense | 1,500 |

| | |
|---|---|
| Miscellaneous Expense | $ 2,500 |
| Office Supplies Expense | 1,000 |
| Service Revenue | 20,000 |
| Share Capital | ? |
| Wages Expense | 9,000 |

**Required**: Using the alphabetized information above for EDW Inc. after its first month of operations, complete the income statement, statement of changes in equity, and balance sheet using the templates provided below.

EDW Inc.
Income Statement
Month Ended March 31, 2023

| | | |
|---|---|---|
| Revenues | | |
| Service Revenue | | $ |
| Expenses | | |
| Wages Expense | $ | |
| Miscellaneous Expense | | |
| Insurance Expense | | |
| Office Supplies Expense | | |
| Net Income | | $ |

EDW Inc.
Statement of Changes in Equity
Month Ended March 31, 2023

| | *Share Capital* | *Retained Earnings* | *Total Equity* |
|---|---|---|---|
| Opening Balance | $ | $ | $ |
| Shares Issued | | | |
| Net Income | | | |
| Ending Balance | $ | $ | $ |

EDW Inc.
Balance Sheet
March 31, 2023

| Assets | | Liabilities | |
|---|---|---|---|
| Cash | $ | Accounts Payable | $ |
| Accounts Receivable | | | |
| Equipment | | Equity | |
| | | Share Capital | $ |
| | | Retained Earnings | |
| | | Total Equity | |
| Total Assets | $ | Total Liabilities and Equity | $ |

**EXERCISE 1–9 (LO4) Net Income, Dividends**

| | | | |
|---|---|---|---|
| Accounts Receivable | $17,000 | Machinery | $14,000 |
| Accounts Payable | 3,000 | Note Payable | 18,000 |
| Advertising Expense | 5,000 | Retained Earnings | 6,000 |
| Cash | 9,000 | Salaries Expense | 64,000 |
| Dividends | 2,000 | Service Revenue | 81,000 |
| Insurance Expense | 7,000 | Share Capital | 10,000 |

**Required**: Algonquin Inc. began operations on August 1, 2021. After its second year, Algonquin Inc.'s accounting system showed the information above. During the second year, no additional shares were issued. Complete the income statement, statement of changes in equity, and balance sheet using the templates provided below.

Algonquin Inc.
Income Statement
Year Ended July 31, 2023

| | | |
|---|---|---|
| Revenues | | |
| Service Revenue | | $ |
| Expenses | | |
| Advertising Expense | $ | |
| Insurance Expense | | |
| Salaries Expense | | |
| Net Income | | $ |

Algonquin Inc.
Statement of Changes in Equity
Year Ended July 31, 2023

| | Share Capital | Retained Earnings | Total Equity |
|---|---|---|---|
| Opening Balance | $ 10,000 | $ 6,000 | $ 16,000 |
| Net Income | | | |
| Dividends | | | |
| Ending Balance | $ | $ | $ |

Algonquin Inc.
Balance Sheet
July 31, 2023

| Assets | | Liabilities | | |
|---|---|---|---|---|
| Cash | $ | Accounts Payable | $ | |
| Accounts Receivable | | Note Payable | | |
| Machinery | | Total Liabilities | | $ |
| | | Equity | | |
| | | Share Capital | $ | |
| | | Retained Earnings | | |
| | | Total Equity | | |
| Total Assets | $ | Total Liabilities and Equity | | $ |

**EXERCISE 1–10 (LO4) Net Income, Dividends, Shares Issued** Watch video

**Required**: Refer to EXERCISE 1–9. Use the same information EXCEPT assume that during the second year, additional shares were issued for cash of $3,000. Complete the income statement, statement of changes in equity, and balance sheet using the templates provided below.

Algonquin Inc.
Income Statement
Year Ended July 31, 2023

| | | |
|---|---|---|
| *Revenues* | | |
| Service Revenue | | $ |
| *Expenses* | | |
| Advertising Expense | $ | |
| Insurance Expense | | |
| Salaries Expense | | |
| Net Income | | $ |

Algonquin Inc.
Statement of Changes in Equity
Year Ended July 31, 2023

| | *Share Capital* | *Retained Earnings* | *Total Equity* |
|---|---|---|---|
| Opening Balance | $ | $ | $ |
| Shares Issued | | | |
| Net Income | | | |
| Dividends | | | |
| Ending Balance | $ | $ | $ |

Algonquin Inc.
Balance Sheet
July 31, 2023

| | | | | |
|---|---|---|---|---|
| *Assets* | | *Liabilities* | | |
| Cash | $ | Accounts Payable | $ | |
| Accounts Receivable | | Note Payable | | |
| Machinery | | Total Liabilities | | $ |
| | | *Equity* | | |
| | | Share Capital | $ | |
| | | Retained Earnings | | |
| | | Total Equity | | |
| Total Assets | $ | Total Liabilities and Equity | | $ |

**EXERCISE 1–11 (LO4) Net Loss**

| | | | |
|---|---|---|---|
| Accounts Receivable | $1,600 | Rent Payable | $2,500 |
| Cash | 6,000 | Retained Earnings | 4,000 |
| Equipment Rental Expense | 9,400 | Share Capital | 6,400 |
| Fees Earned | 12,000 | Truck | 22,000 |
| Fuel Expense | 500 | Wages Expense | 3,400 |
| Note Payable | 18,000 | | |

**Required**: Wallaby Inc. began operations on February 1, 2023. After its second month, Wallaby Inc.'s accounting system showed the information above. During the second month, no dividends

were declared and no additional shares were issued. Complete the income statement, statement of changes in equity, and balance sheet using the templates provided below.

Wallaby Inc.
Income Statement
Month Ended March 31, 2023

| | | |
|---|---|---|
| *Revenues* | | |
| Fees Earned | | $ |
| *Expenses* | | |
| Equipment Rental Expense | $ | |
| Wages Expense | | |
| Fuel Expense | | |
| Net Loss | | $ |

Wallaby Inc.
Statement of Changes in Equity
Month Ended March 31, 2023

| | *Share Capital* | *Retained Earnings* | *Total Equity* |
|---|---|---|---|
| Opening Balance | $ 6,400 | $ 4,000 | $ 10,400 |
| Net Loss | | | |
| Ending Balance | $ | $ | $ |

Wallaby Inc.
Balance Sheet
March 31, 2023

| *Assets* | | *Liabilities* | | |
|---|---|---|---|---|
| Cash | $ | Rent Payable | $ | |
| Accounts Receivable | | Note Payable | | |
| Truck | | Total Liabilities | | $ |
| | | *Equity* | | |
| | | Share Capital | $ | |
| | | Retained Earnings | | |
| | | Total Equity | | |
| Total Assets | $ | Total Liabilities and Equity | | $ |

---

**EXERCISE 1–12 (LO4) Correcting Financial Statements**

A junior bookkeeper of Adams Ltd. prepared the following incorrect financial statements at the end of its first month of operations.

Adams Ltd.
Income Statement
For the Month Ended January 31, 2023

| | | |
|---|---|---|
| *Service Revenue* | | $3,335 |
| *Expenses* | | |
| Accounts Payable | $300 | |
| Land | 1,000 | |
| Miscellaneous Expenses | 335 | 1,635 |
| Net Income | | $1,700 |

| Balance Sheet | | | |
|---|---|---|---|
| *Assets* | | *Liabilities and Equity* | |
| Cash | $1,000 | Rent Expense | $300 |
| Repairs Expense | 500 | Share Capital | 3,000 |
| Salaries Expense | 1,000 | Retained Earnings | 1,700 |
| Building | 2,500 | | |
| | $5,000 | | $5,000 |

**Required**: Prepare a corrected income statement, statement of changes in equity, and balance sheet.

---

**EXERCISE 1–13 (LO4) Income Statement**

Below are the December 31, 2023, year-end accounts balances for Mitch's Architects Ltd. This is the business's second year of operations.

| | | | |
|---|---|---|---|
| Cash | $23,000 | Share capital | $ 30,400 |
| Accounts receivable | 24,000 | Retained earnings | 5,000 |
| Office supplies inventory | 2,000 | Consulting fees earned | 150,000 |
| Prepaid insurance | 7,000 | Office rent expense | 60,000 |
| Truck | 40,000 | Salaries and benefits expense | 40,000 |
| Office equipment | 15,000 | Utilities expense | 12,000 |
| Accounts payable | 30,000 | Insurance expense | 5,000 |
| Unearned consulting fees | 15,000 | Supplies and postage expense | 2,400 |

Additional information:

**a.** Included in the share capital account balance was an additional $10,000 of shares issued during the current year just ended.

**b.** Included in the retained earnings account balance was dividends paid to the shareholders of $1,000 during the current year just ended.

**Required**: Use these accounts to prepare an income statement similar to the example illustrated in Section 1.4.

### EXERCISE 1–14 (LO4) Statement of Changes in Equity

**Required**: Using the data in EXERCISE 1–13, prepare a statement of changes in equity similar to the example illustrated in Section 1.4.

### EXERCISE 1–15 (LO4) Balance Sheet

**Required**: Using the data in EXERCISE 1–13, prepare a balance sheet similar to the example illustrated in Section 1.4.

### EXERCISE 1–16 (LO4) Financial Statements with Errors

Below are the May 31, 2023, year-end financial statements for Gillespie Corp., prepared by a summer student. There were no share capital transactions in the year just ended.

Gillespie Corp.
Income Statement
For the Year Ended May 31, 2023

| | |
|---|---|
| **Revenues** | |
| Service revenue | $382,000 |
| Unearned service revenue | 25,000 |
| Rent revenue | 90,000 |
| | |
| **Expenses** | |
| Warehouse rent expense | 100,000 |
| Prepaid advertising | 17,000 |
| Salaries and benefits expense | 110,000 |
| Dividends | 10,000 |
| Utilities expense | 42,000 |
| Insurance expense | 15,000 |
| Shop supplies expense | 6,000 |
| Net income | $197,000 |

Gillespie Corp.
Statement of Changes in Equity
At May 31, 2023

| | Share Capital | Retained Earnings | Total Equity |
|---|---|---|---|
| Opening balance | $5,000 | $140,000 | $145,000 |
| Net income | | 197,000 | 197,000 |
| Ending balance | $5,000 | $337,000 | $342,000 |

Gillespie Corp.
Balance Sheet
For the Year Ended May 31, 2023

| | | | | |
|---|---|---|---|---|
| *Assets* | | *Liabilities* | | |
| Cash | $ 50,000 | Accounts payable | $130,000 | |
| Accounts receivable | 85,000 | | | |
| Office equipment | 45,000 | Total liabilities | | $130,000 |
| Building | 240,000 | *Equity* | | |
| Shop supplies | 52,000 | Share capital | $ 5,000 | |
| | | Retained earnings | 337,000 | |
| | | Total equity | | 342,000 |
| Total assets | $472,000 | Total liabilities and equity | | $472,000 |

**Required**: Using the data above, prepare a corrected set of financial statements similar to the examples illustrated in Section 1.4.

---

**EXERCISE 1–17 (LO4) Determining Missing Financial Information**

**Required**: Complete the following calculations for each individual company:

**a.** If ColourMePink Ltd. has a retained earnings opening balance of $50,000 at the beginning of the year, and an ending balance of $40,000 at the end of the year, what would be the net income/loss, if dividends paid were $20,000?

**b.** If ForksAndSpoons Ltd. has net income of $150,000, dividends paid of $40,000 and a retained earnings ending balance of $130,000, what would be the retained earnings opening balance?

**c.** If CupsAndSaucers Ltd. has a retained earnings opening balance of $75,000 at the beginning of the year, and an ending balance of $40,000 at the end of the year, what would be the dividends paid, if the net loss was $35,000?

---

**EXERCISE 1–18 (LO4,5) Equity – What Causes it to Change**

| | Assets | = | Liabilities | + | Equity | |
|---|---|---|---|---|---|---|
| Balances at April 1, 2023 | $100,000 | | $60,000 | | $40,000 | |
| | | | | | ? | Shares issued in April |
| | | | | | ? | April net income(loss) |
| | | | | | ? | Dividends paid in April |
| Balances at April 30, 2023 | $180,000 | = | $130,000 | + | ? | |

**Required**: Using the information provided above, calculate the net income or net loss realized during April under each of the following independent assumptions.

**a.** No shares were issued in April and no dividends were paid.

**b.** $50,000 of shares were issued in April and no dividends were paid.

**c.** No shares were issued in April and $4,000 of dividends were paid in April.

## EXERCISE 1–19 (LO4,5) Equity – What Causes it to Change

| | Assets | = | Liabilities | + | Equity | |
|---|---|---|---|---|---|---|
| Balances at June 1, 2023 | $160,000 | | $100,000 | | $60,000 | |
| | | | | | ? | Shares issued in June |
| | | | | | ? | June net income(loss) |
| | | | | | ? | Dividends paid in June |
| Balances at June 30, 2023 | $200,000 | = | $90,000 | + | ? | |

**Required**: Using the information provided above, calculate the dividends paid in June under each of the following independent assumptions.

**a.** In June no shares were issued and a $70,000 net income was earned.

**b.** $40,000 of shares were issued in June and a $90,000 net income was earned.

**c.** In June $130,000 of shares were issued and an $80,000 net loss was realized.

## EXERCISE 1–20 (LO5) Impact of Transactions on the Accounting Equation

The following list shows the various ways in which the accounting equation might be affected by financial transactions.

| | Assets | = | Liabilities | + | Equity |
|---|---|---|---|---|---|
| 1. | (+) | | | | (+) |
| 2. | (+) | | (+) | | |
| 3. | (+)(-) | | | | |
| 4. | (-) | | | | (-) |
| 5. | (-) | | (-) | | |
| 6. | | | (+) | | (-) |
| 7. | | | (-) | | (+) |
| 8. | | | (+)(-) | | |
| 9. | | | | | (+)(-) |

**Required**: Match one of the above to each of the following financial transactions. If the description below does not represent a financial transaction, indicate 'NT' for 'No Transaction'. The first one is done as an example.

| | | |
|---|---|---|
| **a.** | 3 | Purchased a truck for cash. |
| **b.** | | Issued share capital for cash. |
| **c.** | | Incurred a bank loan as payment for equipment. |
| **d.** | | Made a deposit for electricity service to be provided to the company in the future. |
| **e.** | | Paid rent expense. |
| **f.** | | Signed a new union contract that provides for increased wages in the future. |
| **g.** | | Wrote a letter of complaint to the prime minister about a mail strike and hired a messenger service to deliver letters |
| **h.** | | Received a collect telegram from the prime minister; paid the messenger. |
| **i.** | | Billed customers for services performed. |
| **j.** | | Made a cash payment to satisfy an outstanding obligation. |
| **k.** | | Received a payment of cash in satisfaction of an amount owed by a customer. |
| **l.** | | Collected cash from a customer for services rendered. |
| **m.** | | Paid cash for truck operation expenses. |
| **n.** | | Made a monthly payment on the bank loan; this payment included a payment on part of the loan and also an amount of interest expense. (*Hint*: This transaction affects more than two parts of the accounting equation.) |
| **o.** | | Issued shares in the company to pay off a loan. |

## Problems

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### PROBLEM 1–1 (LO4,5) Preparing Financial Statements

Following are the asset, liability, and equity items of Dumont Inc. at January 31, 2023, after its first month of operations.

| ASSETS | | = | LIABILITIES | | + | EQUITY | |
|---|---|---|---|---|---|---|---|
| Cash | $1,300 | | Bank Loan | $8,000 | | Share Capital | $2,000 |
| Accounts Receivable | 2,400 | | Accounts Payable | 1,000 | | Service Revenue | 7,500 |
| Prepaid Expenses | 550 | | | | | Advertising Expense | 500 |
| Unused Supplies | 750 | | | | | Commissions Expense | 720 |
| Truck | 9,000 | | | | | Insurance Expense | 50 |
| | | | | | | Interest Expense | 80 |
| | | | | | | Rent Expense | 400 |
| | | | | | | Supplies Expense | 100 |
| | | | | | | Telephone Expense | 150 |
| | | | | | | Wages Expense | 2,500 |

**Required**:

1. Prepare an income statement and statement of changes in equity for Dumont's first month ended January 31, 2023.
2. Prepare a balance sheet at January 31, 2023.

---

**PROBLEM 1–2 (LO4) Preparing Financial Statements**

Laberge Sheathing Inc. began operations on January 1, 2023. The office manager, inexperienced in accounting, prepared the following statement for the business's most recent month ended August 31, 2023.

Laberge Sheathing Inc.
Financial Statement
Month Ended August 31, 2023

| | | | |
|---|---|---|---|
| Cash | $400 | Accounts Payable | $7,800 |
| Accounts Receivable | 3,800 | Share Capital | 3,200 |
| Unused Supplies | 100 | Service Revenue | 2,000 |
| Equipment | 8,700 | Retained Earnings | 4,000 |
| Advertising Expense | 300 | | |
| Interest Expense | 500 | | |
| Maintenance Expense | 475 | | |
| Supplies Used | 125 | | |
| Wages Expense | 2,600 | | |
| | $17,000 | | $17,000 |

**Required**:

1. Prepare an income statement and statement of changes in equity for the month ended August 31, 2023, and a balance sheet at August 31, 2023. No shares were issued in August.
2. Using the information from the balance sheet completed in Part 1, calculate the percentage of assets financed by equity.

---

**PROBLEM 1–3 (LO5) Transaction Analysis** Watch video

The following transactions of Larson Services Inc. occurred during August 2023, its first month of operations.

| | | |
|---|---|---|
| Aug. | 1 | Issued share capital for $3,000 cash |
| | 1 | Borrowed $10,000 cash from the bank |
| | 1 | Paid $8,000 cash for a used truck |
| | 3 | Signed a contract with a customer to do a $15,000 job beginning in November |
| | 4 | Paid $600 for a one-year truck insurance policy effective August 1 |
| | 5 | Collected fees of $2,000 for work to be performed in September |
| | 7 | Billed a client $5,000 for services performed today |
| | 9 | Paid $250 for supplies purchased and used today |
| | 12 | Purchased $500 of supplies on credit |
| | 15 | Collected $1,000 of the amount billed August 7 |
| | 16 | Paid $200 for advertising in The News that ran the first two weeks of August |
| | 20 | Paid $250 of the amount owing regarding the credit purchase of August 12 |
| | 25 | Paid the following expenses: rent for August, $350; salaries, $2,150; telephone, $50; truck operation, $250 |
| | 28 | Called clients for payment of the balances owing from August 7 |
| | 31 | Billed a client $6,000 for services performed today |
| | 31 | $500 of the amount collected on August 5 has been earned as of today |

**Required**:

1. Create a table like the one below by copying the headings shown.

| ASSETS | | | | | | = | LIABILITIES | | | + | EQUITY | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cash | + Acct. Rec. | + Ppd. Exp. | + Unused Supplies | + | Truck | = | Bank Loan | + Acct. Pay. | + Unearned Revenue | + | Share Capital | + Retained Earnings |

2. Use additions and subtractions in the table created in Part 1 to show the effects of the August transactions. For non-transactions that do not impact the accounting equation items (such as August 3), indicate 'NE' for 'No Effect'.

3. Total each column and prove the accounting equation balances.

---

**PROBLEM 1–4 (LO4) Preparing Financial Statements** **Watch video**

**Required**: Refer to your answer for Problem 1–3. Prepare an income statement and a statement of changes in equity for the month ended August 31, 2023. Label the revenue earned as Fees Earned. Prepare a balance sheet at August 31, 2023.

**PROBLEM 1–5 (LO5) Transaction Analysis and Table**

The following transactions occurred for Olivier Bondar Ltd., an restaurant management consulting service, during May, 2024:

| | |
|---|---|
| May 1 | Received a cheque in the amount of $5,000 from TUV Restaurant Ltd., for a restaurant food cleanliness assessment to be conducted in June. |
| May 1 | Paid $5,000 for office rent for the month of May. |
| May 2 | Purchased office supplies for $3,000 on account. |
| May 3 | Completed a consultation project for McDanny's Restaurant and billed them $27,000 for the work. |
| May 4 | Purchased a laptop computer for $3,000 in exchange for a note payable due in 45 days. |
| May 5 | Olivier Bondar was a little short on cash, so the manager made an application for a bank loan in the amount of $20,000. It is expected that the bank will make their decision regarding the loan next week. |
| May 6 | Received an invoice from the utilities company for electricity in the amount of $300. |
| May 10 | Bank approved the loan and deposited $20,000 into Olivier Bondar's bank account. First loan payment is due on June 10. |
| May 11 | Paid for several invoices outstanding from April for goods and services received for a total of $8,000. The breakdown of the invoice costs are: telephone expense $500; advertising expense $3,000; office furniture $2,000; office supplies $2,500. |
| May 13 | Paid employee salaries owing from May 1 to May 13 in the amount of $3,000. |
| May 14 | Completed consulting work for a U.S. client and invoiced $18,000 US (US funds). The Canadian equivalent is $25,000 CAD. |
| May 15 | Received $25,000 cash for work done and invoiced in April. |
| May 18 | Hired a new employee who will begin work on May 25. Salary will be $2,500 every two weeks. |
| May 21 | Placed an order request for new shelving for the office. Catalogue price is $2,500. |
| May 27 | Paid employee salaries owing from May 14 to May 27 in the amount of $3,500. |
| May 29 | The bookkeeper was going to be away for two weeks, so the June rent of $5,000 was paid. |
| May 31 | Reimbursed $50 in cash to an employee for use of his personal vehicle for company business on May 20. |
| May 31 | Shelving unit ordered on May 21 was delivered and installed. Total cost was $3,000, including labour. |

**Required**: Create a table with the following column headings and opening balances. Below the opening balance, number each row from 1 to 18:

| | Cash | Accounts receivable | Office supplies | Prepaid expenses | Equipment | Office furniture | Accounts payable | Note/Loan payable | Unearned revenue | Share capital | Retained earnings |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Open Bal | +10,000 | +25,000 | +2,000 | 0 | +25,000 | +15,000 | +35,000 | 0 | 0 | +8,000 | +34,000 |
| 1 | | | | | | | | | | | |
| 2 | | | | | | | | | | | |
| 3 | | | | | | | | | | | |
| 4 | | | | | | | | | | | |
| 5 | | | | | | | | | | | |
| 6 | | | | | | | | | | | |
| 7 | | | | | | | | | | | |
| 8 | | | | | | | | | | | |
| 9 | | | | | | | | | | | |
| 10 | | | | | | | | | | | |
| 11 | | | | | | | | | | | |
| 12 | | | | | | | | | | | |
| 13 | | | | | | | | | | | |
| 14 | | | | | | | | | | | |
| 15 | | | | | | | | | | | |
| 16 | | | | | | | | | | | |
| 17 | | | | | | | | | | | |
| 18 | | | | | | | | | | | |
| Bal | | | | | | | | | | | |

Using the table as shown in Figure 1.3 of the text, complete the table for the 18 items listed in May and total each column. If any of the items are not to be recorded, leave the row blank.

---

**PROBLEM 1–6 (LO5) Transaction Analysis and Table**

**Required**: Using the data from the table in PROBLEM 1–5, prepare the balance sheet as at May 31, 2024.

# Chapter 2

# The Accounting Process

Chapter 2 looks more closely at asset, liability, and equity accounts and how they are affected by double-entry accounting, namely, debits and credits. The transactions introduced in Chapter 1 for Big Dog Carworks Corp. are used to explain debit and credit analysis. The preparation of a trial balance will be introduced. Additionally, this chapter will demonstrate how transactions are recorded in a general journal and posted to a general ledger. Finally, the concept of the accounting cycle is presented.

## Chapter 2 Learning Objectives

LO1 – Describe asset, liability, and equity accounts, identifying the effect of debits and credits on each.

LO2 – Analyze transactions using double-entry accounting.

LO3 – Prepare a trial balance and explain its use.

LO4 – Record transactions in a general journal and post in a general ledger.

LO5 – Define the accounting cycle.

## Concept Self-Check

Use the following as a self-check while working through Chapter 2.

1. What is an asset?
2. What is a liability?
3. What are the different types of equity accounts?
4. What is retained earnings?
5. How are retained earnings and revenues related?
6. Why are T-accounts used in accounting?

7. How do debits and credits impact the T-account?
8. What is a chart of accounts?
9. Are increases in equity recorded as a debit or credit?
10. Are decreases in equity recorded as a debit or credit?
11. Does issuing shares and revenues cause equity to increase or decrease?
12. Are increases in the share capital account recorded as a debit or credit?
13. Are increases in revenue accounts recorded as debits or credits?
14. Do dividends and expenses cause equity to increase or decrease?
15. Are increases in the dividend account recorded as a debit or credit?
16. Are increases in expense accounts recorded as debits or credits?
17. How is a trial balance useful?
18. What is the difference between a general journal and a general ledger?
19. Explain the posting process.
20. What is the accounting cycle?

**NOTE:** The purpose of these questions is to prepare you for the concepts introduced in the chapter. Your goal should be to answer each of these questions as you read through the chapter. If, when you complete the chapter, you are unable to answer one or more the Concept Self-Check questions, go back through the content to find the answer(s). Solutions are not provided to these questions.

## 2.1 Accounts

LO1 – Describe asset, liability, and equity accounts, identifying the effect of debits and credits on each.

Chapter 1 reviewed the analysis of financial transactions and the resulting impact on the accounting equation. We now expand that discussion by introducing the way transaction is recorded in an *account*. An **account** accumulates detailed information regarding the increases and decreases in a specific asset, liability, or equity item. Accounts are maintained in a **ledger** also referred to as the **books**. We now review and expand our understanding of asset, liability, and equity accounts.

### Asset Accounts

Recall that assets are resources that have future economic benefits for the business. The primary purpose of assets is that they be used in day-to-day operating activities in order to generate revenue either directly or indirectly. A separate account is established for each asset. Examples of asset accounts are reviewed below.

- **Cash** has future purchasing power. Coins, currency, cheques, and bank account balances are examples of cash.
- **Accounts receivable** occur when products or services are sold on account or on credit. When a sale occurs on account or on credit, the customer has not paid cash but promises to pay in the future.
- **Notes receivable** are a promise to pay an amount on a specific future date plus a predetermined amount of interest.
- **Office supplies** are supplies to be used in the future. If the supplies are used before the end of the accounting period, they are an expense instead of an asset.
- **Merchandise inventory** are items to be sold in the future.
- **Prepaid insurance** represents an amount paid in advance for insurance. The prepaid insurance will be used in the future.
- **Prepaid rent** represents an amount paid in advance for rent. The prepaid rent will be used in the future.
- **Land** cost must be in a separate account from any building that might be on the land. Land is used over future periods.
- **Buildings** indirectly help a business generate revenue over future accounting periods since they provide space for day-to-day operating activities.

### Liability Accounts

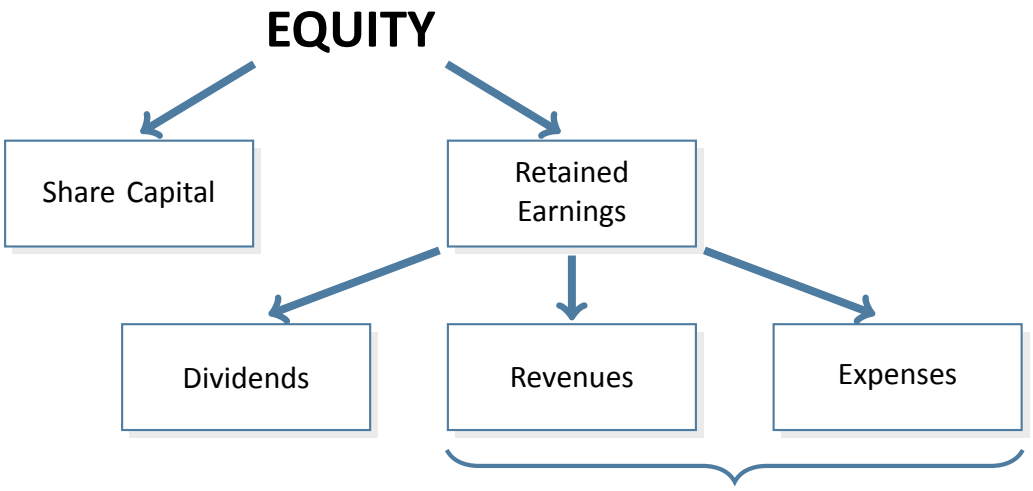
As explained in Chapter 1, a liability is an obligation to pay for an asset in the future. The primary purpose of liabilities is to finance investing activities that include the purchase of assets like land, buildings, and equipment. Liabilities are also used to finance operating activities involving, for example, accounts payable, unearned revenues, and wages payable. A separate account is created for each liability. Examples of liability accounts are reviewed below.

- **Accounts payable** are debts owed to creditors for goods purchased or services received as a result of day-to-day operating activities. An example of a service received on credit might be a plumber billing the business for a repair.

- **Wages payable** are wages owed to employees for work performed.
- **Short-term notes payable** are a debt owed to a bank or other creditor that is normally paid within one year. Notes payable are different than accounts payable in that notes involve interest.
- **Long-term notes payable** are a debt owed to a bank or other creditor that is normally paid beyond one year. Like short-term notes, long-term notes involve interest.
- **Unearned revenues** are payments received in advance of the product or service being provided. In other words, the business owes a customer the product/service.

## Equity Accounts

Chapter 1 explained that equity represents the net assets owned by the owners of a business. In a corporation, the owners are called shareholders. Equity is traditionally one of the more challenging concepts to understand in introductory financial accounting. The difficulty stems from there being different types of equity accounts: share capital, retained earnings, dividends, revenues, and expenses. Share capital represents the investments made by owners into the business and causes equity to increase. Retained earnings is the sum of all net incomes earned over the life of the corporation to date, less any dividends distributed to shareholders over the same time period. Therefore, the Retained Earnings account includes revenues, which cause equity to increase, along with expenses and dividends, which cause equity to decrease. Figure 2.1 summarizes equity accounts.




Recall that revenues less expenses equals net income/net loss. Net income/net loss is not an account but is the result of subtracting expenses from revenues.

**Figure 2.1: Composition of Equity Accounts**

## T-accounts

A simplified account, called a **T-account**, is often used as a teaching/learning tool to show increases and decreases in an account. It is called a T-account because it resembles the letter *T*. As shown in the T-account below, the left side records **debit** entries and the right side records **credit** entries.

| Account Name | |
|---|---|
| Debit (always on left) | Credit (always on right) |

The *type* of account determines whether an increase or a decrease in a particular transaction is represented by a debit or credit. For financial transactions that affect *assets*, *dividends*, and *expenses*, increases are recorded by debits and decreases by credits. This guideline is shown in the following T-account.

| Assets, Dividends, Expenses | |
|---|---|
| Debits are always increases | Credits are always decreases |
| | |

For financial transactions that affect *liabilities, share capital*, and *revenues*, increases are recorded by credits and decreases by debits, as follows:

| Liabilities, Revenues, Share Capital | |
|---|---|
| Debits are always decreases | Credits are always increases |
| | |

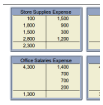
Another way to illustrate the debit and credit rules is based on the accounting equation. Remember that dividends, expenses, revenues, and share capital are equity accounts.

| | Assets | = | Liabilities | + | Equity |
|---|---|---|---|---|---|
| Increases are recorded as: | Debits | | Credits | | Credits[1] |
| Decreases are recorded as: | Credits | | Debits | | Debits[2] |

The following summary shows how debits and credits are used to record increases and decreases in various types of accounts.

| | |
|---|---|
| ASSETS | LIABILITIES |
| DIVIDENDS | SHARE CAPITAL |
| EXPENSES | REVENUE |
| Increases are DEBITED. | Increases are CREDITED. |
| Decreases are CREDITED. | Decreases are DEBITED. |

This summary will be used in a later section to illustrate the recording of debits and credits regarding the transactions of Big Dog Carworks Corp. introduced in Chapter 1.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Account Types.

The **account balance** is determined by adding and subtracting the increases and decreases in an account. Two assumed examples are presented below.

Cash

| | | |
|---|---|---|
| | 10,000 | 3,000 |
| | 3,000 | 3,000 |
| | 400 | 2,400 |
| | 8,000 | 2,000 |
| | | 7,100 |
| | | 200 |
| Balance | 3,700 | |

Accounts Payable

| | | |
|---|---|---|
| 700 | 5,000 | |
| | 4,300 | Balance |

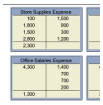
The $3,700 debit balance in the Cash account was calculated by adding all the debits and subtracting the sum of the credits. The $3,700 is recorded on the debit side of the T-account because the debits are greater than the credits. In Accounts Payable, the balance is a $4,300 credit calculated by subtracting the debits from the credits.

Notice that Cash shows a debit balance while Accounts Payable shows a credit balance. The Cash account is an asset so its *normal balance* is a debit. A **normal balance** is the side on which increases

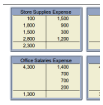
[1] Revenues and the issuance of Share Capital are equity accounts. They cause equity to increase so increases in these account types are recorded as credits.

[2] Expenses, and Dividends are equity accounts. They cause equity to decrease. Decreases in equity are always recorded as debits so as expenses and dividends are realized, they are debited.

occur. Accounts Payable is a liability and because liabilities increase with credits, the normal balance in Accounts Payable is a credit as shown in the T-account above.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Account Balances.

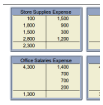


An exploration is available on the Lyryx site. Log into your Lyryx course to run Normal Balance.

### Chart of Accounts

A business will create a list of accounts called a **chart of accounts** where each account is assigned both a name and a number. A common practice is to have the accounts arranged in a manner that is compatible with the order of their use in financial statements. For instance, Asset accounts begin with the digit '1', Liability accounts with the digit '2'. Each business will have a unique chart of accounts that corresponds to its specific needs. Big Dog Carworks Corp. uses the following numbering system for its accounts:

| | |
|---|---|
| 100-199 | Asset accounts |
| 200-299 | Liability accounts |
| 300-399 | Share capital, retained earnings, and dividend accounts |
| 400-499 | Revenue accounts |
| 500-599 | Cost of goods sold accounts |
| 600-699 | Expense accounts |



An exploration is available on the Lyryx site. Log into your Lyryx course to run Account Numbers.

## 2.2 Transaction Analysis Using Accounts

LO2 – Analyze transactions using double-entry accounting.

In Chapter 1, transactions for Big Dog Carworks Corp. were analyzed to determine the change in each item of the accounting equation. In this next section, these same transactions will be used to demonstrate double-entry accounting. **Double-entry accounting** means each transaction is recorded in at least two accounts where the total debits ALWAYS equal the total credits. As a result of double-entry accounting, the sum of all the debit balance accounts in the ledger must equal the sum of all the credit

balance accounts. The rule that debits = credits is rooted in the accounting equation:

| | **ASSETS** | **=** | **LIABILITIES** | **+** | **EQUITY**[3] |
|---|---|---|---|---|---|
| Increases are: | Debits | | Credits | | Credits |
| Decreases are: | Credits | | Debits | | Debits |

## Illustrative Problem—Double-Entry Accounting and the Use of Accounts

In this section, the following debit and credit summary will be used to record the transactions of Big Dog Carworks Corp. into T-accounts.

| | |
|---|---|
| ASSETS | LIABILITIES |
| DIVIDENDS | SHARE CAPITAL |
| EXPENSES | REVENUE |
| Increases are DEBITED. | Increases are CREDITED. |
| Decreases are CREDITED. | Decreases are DEBITED. |

***Transaction 1***

Jan. 1 – Big Dog Carworks Corp. issued 1,000 shares to Bob Baldwin, a shareholder, for a total of $10,000 cash.

*Analysis:*

Debit: An asset account, Cash, is increased resulting in a debit.

| Cash |
|---|
| 10,000 |

Credit: Share Capital, an equity account, is increased resulting in a credit.*

| Share Capital |
|---|
| 10,000 |

**Note: An alternate analysis would be that the issuance of shares causes equity to increase and increases in equity are always recorded as a credit.*

***Transaction 2***

Jan. 2 – Borrowed $3,000 from the bank.

[3]The issuance of share capital and revenues cause equity to increase; as indicated above, increases in equity are recorded as credits. Dividends and expenses cause equity to decrease; decreases in equity are recorded as debits.

*Analysis:*

Debit: An asset account, Cash, is increased resulting in a debit.

| Cash | |
|---|---|
| 3,000 | |

Credit: A liability account, Bank Loan, is increased resulting in a credit.

| Bank Loan | |
|---|---|
| | 3,000 |

***Transaction 3***

Jan. 3 – Equipment is purchased for $3,000 cash.

*Analysis:*

Debit: One asset is acquired in exchange for another asset. An asset account, Equipment, is increased resulting in a debit.

| Equipment | |
|---|---|
| 3,000 | |

Credit: The account, Cash, also an asset, is decreased resulting in a credit.

| Cash | |
|---|---|
| | 3,000 |

***Transaction 4***

Jan. 3 – A truck was purchased for $8,000; Big Dog paid $3,000 cash and incurred a $5,000 bank loan for the balance.

*Analysis:*

Debit: An asset account, Truck, is increased resulting in a debit.

| Truck | |
|---|---|
| 8,000 | |

Credit: An asset account, Cash, is decreased resulting in a credit.

| Cash | |
|---|---|
| | 3,000 |

Credit: A liability account, Bank Loan, is increased resulting in a credit.

| Bank Loan | |
|---|---|
| | 5,000 |

*Note: Transaction 4 involves one debit and two credits. Notice that the total debit of $8,000 equals the total credits of $8,000 which satisfies the double-entry accounting rule requiring that debits ALWAYS equal credits.*

***Transaction 5***

Jan. 5 – Big Dog Carworks Corp. paid $2,400 cash for a one-year insurance policy, effective January 1.

*Analysis:*

201

Debit: An asset account, Prepaid Insurance, is increased resulting in a debit. Because the insurance provides future benefit, it is recorded as an asset until it is used.

Prepaid Insurance
2,400

Credit: Payment of the insurance results in a decrease in the asset account, Cash, resulting in a credit.

Cash
2,400

***Transaction 6***

Jan. 10 – The corporation paid $2,000 cash to reduce the bank loan.

*Analysis:*

Debit: This payment decreases the liability, Bank Loan, resulting in a debit.

Bank Loan
2,000

Credit: The payment also decreases the asset, Cash, resulting in a credit.

Cash
2,000

***Transaction 7***

Jan. 15 – The corporation received an advance payment of $400 for repair services to be performed as follows: $300 in February and $100 in March.

*Analysis:*

Debit: An asset, Cash, is increased at the time the cash is received resulting in a debit.

Cash
400

Credit: Since the revenue relating to this cash receipt is not earned as of this date, a liability account, Unearned Repair Revenue, is credited because Big Dog 'owes' the customer $400 of work.

Unearned Repair Revenue
400

***Transaction 8***

Jan. 31 – A total of $10,000 of automotive repair services is performed for a customer who paid $8,000 cash. The remaining $2,000 will be paid in 30 days.

*Analysis:*

Debit: An asset, Cash, is increased resulting in a debit.

Cash
8,000

Debit: An asset, Accounts Receivable, is increased resulting in a debit.

Accounts Receivable
2,000

Credit: An equity, Repair Revenue, is increased resulting in a credit.

Repair Revenue
10,000

***Transaction 9***

Jan. 31 – Operating expenses of $7,100 were paid in cash: Rent expense, $1,600; salaries expense, $3,500; and supplies expense of $2,000. $700 for truck operating expenses (e.g., oil, gas) were incurred on credit.

*Analysis:*

Debit: This transaction increases four expense accounts resulting in a debit to each.

Rent Expense
1,600

Salaries Expense
3,500

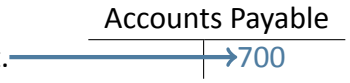
Supplies Expense
2,000

Truck Operating Expense
700

*Note: Each expense is recorded in an individual account.*

Credit: An asset, Cash, is decreased resulting in a credit.

Credit: A liability, Accounts Payable, is increased resulting in a credit.

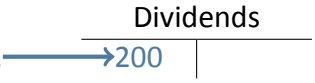



***Transaction 10***

Jan. 31 – Dividends of $200 were paid in cash to the only shareholder, Bob Baldwin.

*Analysis:*

Debit: Dividends, an equity account, is increased resulting in a debit.




*Note: An alternate analysis would be that dividends cause equity to decrease and that decreases in equity are always recorded as a debit.*

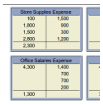
Credit: An asset, Cash is decreased resulting in a credit.

After the January transactions of Big Dog Carworks Corp. have been recorded in the T-accounts, each account is totalled and the difference between the debit balance and the credit balance is calculated, as shown in the following diagram. The numbers in parentheses refer to the transaction numbers used in the preceding section. To prove that the accounting equation is in balance, the account balances for each of assets, liabilities, and equity are added. Notice that total assets of $19,100 equal the sum of total liabilities of $7,100 plus equity of $12,000.

| ASSETS | | | | LIABILITIES | | | | EQUITY | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cash | | | | Bank Loan | | | | Share Capital | | | | Dividends | | Repair Revenue | |
| (1) | 10,000 | (3) | 3,000 | (6) | 2,000 | (2) | 3,000 | | (1) | 10,000 | | (10) | 200 | | (8) | 10,000 |
| (2) | 3,000 | (4) | 3,000 | | | (4) | 5,000 | | | | | | | | |
| (7) | 400 | (5) | 2,400 | | | | | | | | | | | | |
| (8) | 8,000 | (6) | 2,000 | | | Bal. | 6,000 | | | | | | | | |
| | | (9) | 7,100 | | | | | | | | | | | | |
| | | (10) | 200 | | | | | | | | | | | | |
| Bal. | 3,700 | | | Accounts Payable | | | | | | | | | | Rent Expense | |
| | | | | | | (9) | 700 | | | | | | | (9) | 1,600 |
| Accounts Receivable | | | | Unearned Repair Revenue | | | | | | | | | | Salaries Expense | |
| (8) | 2,000 | | | | | (7) | 400 | | | | | | | (9) | 3,500 |
| Prepaid Insurance | | | | | | | | | | | | | | Supplies Expense | |
| (5) | 2,400 | | | | | | | | | | | | | (9) | 2,000 |
| Equipment | | | | | | | | | | | | | | | |
| (3) | 3,000 | | | | | | | | | | | | | Truck Operation Expense | |
| | | | | | | | | | | | | | | (9) | 700 |
| Truck | | | | | | | | | | | | | | | |
| (4) | 8,000 | | | | | | | | | | | | | | |

**19,100[1] = 7,100[2] + 12,000[3]**

1. 3,700 + 2,000 + 2,400 + 3,000 + 8,000 = 19,100
2. 6,000 + 700 + 400 = 7,100
3. 10,000 - 200 + 10,000 - 1,600 - 3,500 - 2,000 - 700 = 12,000



An exploration is available on the Lyryx site. Log into your Lyryx course to run Analyzing Transactions.

## 2.3 The Trial Balance

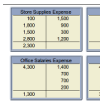
LO3 – Prepare a trial balance and explain its use.

To help prove that the accounting equation is in balance, a trial balance is normally prepared instead of the T-account listing shown in the previous section. A **trial balance** is an internal document that lists all the account balances at a point in time. The total debits must equal total credits on the trial balance. The form and content of a trial balance is illustrated below, using the account numbers, account names, and account balances of Big Dog Carworks Corp. at January 31, 2023. Assume that the account numbers are those assigned by the business.

Big Dog Carworks Corp.
Trial Balance
At January 31, 2023

| *Acct. No.* | *Account* | *Debit* | *Credit* |
|---|---|---|---|
| 101 | Cash | $3,700 | |
| 110 | Accounts receivable | 2,000 | |
| 161 | Prepaid insurance | 2,400 | |
| 183 | Equipment | 3,000 | |
| 184 | Truck | 8,000 | |
| 201 | Bank loan | | $6,000 |
| 210 | Accounts payable | | 700 |
| 247 | Unearned revenue | | 400 |
| 320 | Share capital | | 10,000 |
| 330 | Dividends | 200 | |
| 450 | Repair revenue | | 10,000 |
| 654 | Rent expense | 1,600 | |
| 656 | Salaries expense | 3,500 | |
| 668 | Supplies expense | 2,000 | |
| 670 | Truck operation expense | 700 | |
| | | $27,100 | $27,100 |

Double-entry accounting requires that debits equal credits. The trial balance establishes that this equality exists for Big Dog but it does not ensure that each item has been recorded in the proper account. Neither does the trial balance ensure that all items that should have been entered have been entered. In addition, a transaction may be recorded twice. Any or all of these errors could occur and the trial balance would still balance. Nevertheless, a trial balance provides a useful mathematical check before preparing financial statements.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Trial Balance.

## Preparation of Financial Statements

Financial statements for the one-month period ended January 31, 2023 can now be prepared from the trial balance figures. First, an income statement is prepared.

Big Dog Carworks Corp.
Trial Balance
At January 31, 2023

| *Acct. No.* | *Account* | *Debit* | *Credit* |
|---|---|---|---|
| 101 | Cash | $ 3,700 | |
| 110 | Accounts receivable | 2,000 | |
| 161 | Prepaid insurance | 2,400 | |
| 183 | Equipment | 3,000 | |
| 184 | Truck | 8,000 | |
| 201 | Bank loan | | $ 6,000 |
| 210 | Accounts payable | | 700 |
| 247 | Unearned revenue | | 400 |
| 320 | Share capital | | 10,000 |
| 330 | Dividends | 200 | |
| 450 | Repair revenue | | 10,000 |
| 654 | Rent expense | 1,600 | |
| 656 | Salaries expense | 3,500 | |
| 668 | Supplies expense | 2,000 | |
| 670 | Truck operation expense | 700 | |
| | | $27,100 | $27,100 |

Big Dog Carworks Corp.
Income Statement
For the Month Ended January 31, 2023

| | | |
|---|---|---|
| Revenues | | |
| Repair revenue | | $10,000 |
| Expenses | | |
| Salaries expense | $ 3,500 | |
| Supplies expense | 2,000 | |
| Rent expense | 1,600 | |
| Truck operation expense | 700 | |
| Total expenses | | 7,800 |
| Net income | | $ 2,200 |

Share Capital and Dividends are transferred to the Statement of Changes in Equity. Dividends is part of Retained Earnings because it is a distribution of net income.

Net Income is transferred to the Statement of Changes in Equity as part of Retained Earnings.

Big Dog Carworks Corp.
Statement of Changes in Equity
For the Month Ended January 31, 2023

| | *Share Capital* | *Retained Earnings* | *Total Equity* |
|---|---|---|---|
| Balance at beginning of period | $ -0- | $ -0- | $ -0- |
| Shares issued | 10,000 | | 10,000 |
| Net income | | 2,200 | 2,200 |
| Dividends | | (200) | (200) |
| Ending balance | $10,000 | $2,000 | $12,000 |

The asset and liability accounts from the trial balance and the ending balances for share capital and retained earnings on the statement of changes in equity are used to prepare the balance sheet.

Big Dog Carworks Corp.
Trial Balance
At January 31, 2023

| *Acct. No.* | *Account* | *Debit* | *Credit* |
|---|---|---|---|
| 101 | Cash | $ 3,700 | |
| 110 | Accounts receivable | 2,000 | |
| 161 | Prepaid insurance | 2,400 | |
| 183 | Equipment | 3,000 | |
| 184 | Truck | 8,000 | |
| 201 | Bank loan | | $ 6,000 |
| 210 | Accounts payable | | 700 |
| 247 | Unearned revenue | | 400 |
| 320 | Share capital | | 10,000 |
| 330 | Dividends | 200 | |
| 450 | Repair revenue | | 10,000 |
| 654 | Rent expense | 1,600 | |
| 656 | Salaries expense | 3,500 | |
| 668 | Supplies expense | 2,000 | |
| 670 | Truck operation expense | 700 | |
| | | $27,100 | $27,100 |

These accounts are used to prepare the Balance Sheet.

Big Dog Carworks Corp.
Balance Sheet
At January 31, 2023

| | | |
|---|---|---|
| *Assets* | | |
| Cash | $ 3,700 | |
| Accounts receivable | 2,000 | |
| Prepaid insurance | 2,400 | |
| Equipment | 3,000 | |
| Truck | 8,000 | |
| Total assets | | $19,100 |
| *Liabilities* | | |
| Bank loan | $ 6,000 | |
| Accounts payable | 700 | |
| Unearned repair revenue | 400 | |
| Total liabilities | | $ 7,100 |
| *Equity* | | |
| Share capital | $10,000 | |
| Retained earnings | 2,000 | |
| Total equity | | 12,000 |
| Total liabilities and equity | | $19,100 |

The Share Capital and Retained Earnings balances are transferred to the Balance Sheet from the Statement of Changes in Equity

**NOTE:** Pay attention to the links between financial statements.

***The income statement is linked to the statement of changes in equity:*** Revenues and expenses are reported on the income statement to show the details of net income. Because net income causes equity to change, it is then reported on the statement of changes in equity.

***The statement of changes in equity is linked to the balance sheet:*** The statement of changes in equity shows the details of how equity changed during the accounting period. The balances for share capital and retained earnings that appear on the statement of changes in equity are transferred to the equity section of the balance sheet.

The balance sheet SUMMARIZES equity by showing only account balances for share capital and retained earnings. To obtain the details regarding these equity accounts, we must look at the income statement and the statement of changes in equity.

## 2.4 Using Formal Accounting Records

LO4 – Record transactions in a general journal and post in a general ledger.

The preceding analysis of financial transactions used T-accounts to record debits and credits. T-accounts will continue to be used for illustrative purposes throughout this book. In actual practice, financial transactions are recorded in a general journal.

A **general journal**, or just **journal**, is a document that is used to chronologically record a business's debit and credit transactions (see Figure 2.2). It is often referred to as the *book of original entry*. **Journalizing** is the process of recording a financial transaction in the journal. The resulting debit and credit entry recorded in the journal is called a **journal entry**.

A **general ledger**, or just **ledger**, is a record that contains all of a business's accounts. **Posting** is the process of transferring amounts from the journal to the matching ledger accounts. Because amounts recorded in the journal eventually end up in a ledger account, the ledger is sometimes referred to as a *book of final entry*.

### Recording Transactions in the General Journal

Each transaction is first recorded in the journal. The January transactions of Big Dog Carworks Corp. are recorded in its journal as shown in Figure 2.2. The journalizing procedure follows these steps (refer to Figure 2.2 for corresponding numbers):

1. The year is recorded at the top and the month is entered on the first line of page 1. This information is repeated only on each new journal page used to record transactions.
2. The date of the first transaction is entered in the second column, on the first line. The day of each transaction is always recorded in this second column.
3. The name of the account to be debited is entered in the description column on the first line. By convention, accounts to be debited are usually recorded before accounts to be credited. The column titled 'F' (for Folio) indicates the number given to the account in the General Ledger. For example, the account number for Cash is 101. The amount of the debit is recorded in the debit column. A dash is often used by accountants in place of .00.
4. The name of the account to be credited is on the second line of the description column and is indented about one centimetre into the column. Accounts to be credited are always indented in this way in the journal. The amount of the credit is recorded in the credit column. Again, a dash may be used in place of .00.

5. An explanation of the transaction is entered in the description column on the next line. It is not indented.
6. A line is usually skipped after each journal entry to separate individual journal entries and the date of the next entry recorded. It is unnecessary to repeat the month if it is unchanged from that recorded at the top of the page.

This entry tells us to:

- Post $10,000 to the debit side of the Cash account (increasing Cash by $10,000), and
- Post $10,000 to the credit side of the Share Capital account (increasing this account by $10,000).

GENERAL JOURNAL — Page 1

| | Date | | Description | F | Debit | Credit |
|---|---|---|---|---|---|---|
| 1 | 2023 | | | | | |
| | Jan. | 1 | Cash | 101 | 10000 - | |
| | | | Share Capital | 320 | | 10000 - |
| 2 | | | To record the issuance of share capital. | | | |
| 3 | | 2 | Cash | 101 | 3000 - | |
| 4 | | | Bank Loan | 201 | | 3000 - |
| 5 | | | To record receipt of a bank loan. | | | |
| 6 | | | | | | |
| | | 2 | Equipment | 183 | 3000 - | |
| | | | Cash | 101 | | 3000 - |
| | | | To record the purchase of equipment for cash. | | | |
| | | 3 | Truck | 184 | 8000 - | |
| | | | Bank Loan | 201 | | 5000 - |
| | | | Cash | 101 | | 3000 - |
| | | | To record the purchase of a tow truck; paid cash and incurred additional bank loan. | | | |
| | | 5 | Prepaid Insurance | 161 | 2400 - | |
| | | | Cash | 101 | | 2400 - |
| | | | To record payment for a one-year insurance policy. | | | |
| | | 10 | Bank Loan | 201 | 2000 - | |
| | | | Cash | 101 | | 2000 - |
| | | | To record payment on bank loan. | | | |
| | | 15 | Cash | 101 | 400 - | |
| | | | Unearned Repair Revenue | 247 | | 400 - |
| | | | To record receipt of payment for services not performed: $300 for February, $100 for March. | | | |
| | | 31 | Cash | 101 | 8000 - | |
| | | | Accounts Receivable | 110 | 2000 - | |
| | | | Repair Revenue | 450 | | 10000 - |
| | | | To record repaid revenue earned in January. | | | |
| | | 31 | Rent Expense | 654 | 1600 - | |
| | | | Salaries Expense | 656 | 3500 - | |
| | | | Supplies Expense | 668 | 2000 - | |
| | | | Truck Operation Expense | 670 | 700 - | |
| | | | Cash | 101 | | 7100 - |
| | | | Accounts Payable | 210 | | 700 - |
| | | | To record cash payment of expenses for the month. | | | |
| | | 31 | Dividends | 330 | 200 - | |
| | | | Cash | 101 | | 200 - |
| | | | To record distribution of dividends. | | | |

**Figure 2.2: General Journal Transactions for BDCC in January**

Most of Big Dog's entries have one debit and credit. An entry can also have more than one debit

or credit, in which case it is referred to as a **compound entry**. The entry dated January 3 is an example of a compound entry.

## Posting Transactions to the General Ledger

The **ledger account** is a formal variation of the T-account. The ledger accounts shown in Figure 2.3 are similar to what is used in electronic/digital accounting programs. Ledger accounts are kept in the general ledger. Debits and credits recorded in the journal are posted to appropriate ledger accounts so that the details and balance for each account can be found easily. Figure 2.3 uses the first transaction of Big Dog Carworks Corp. to illustrate how to post amounts and record other information.

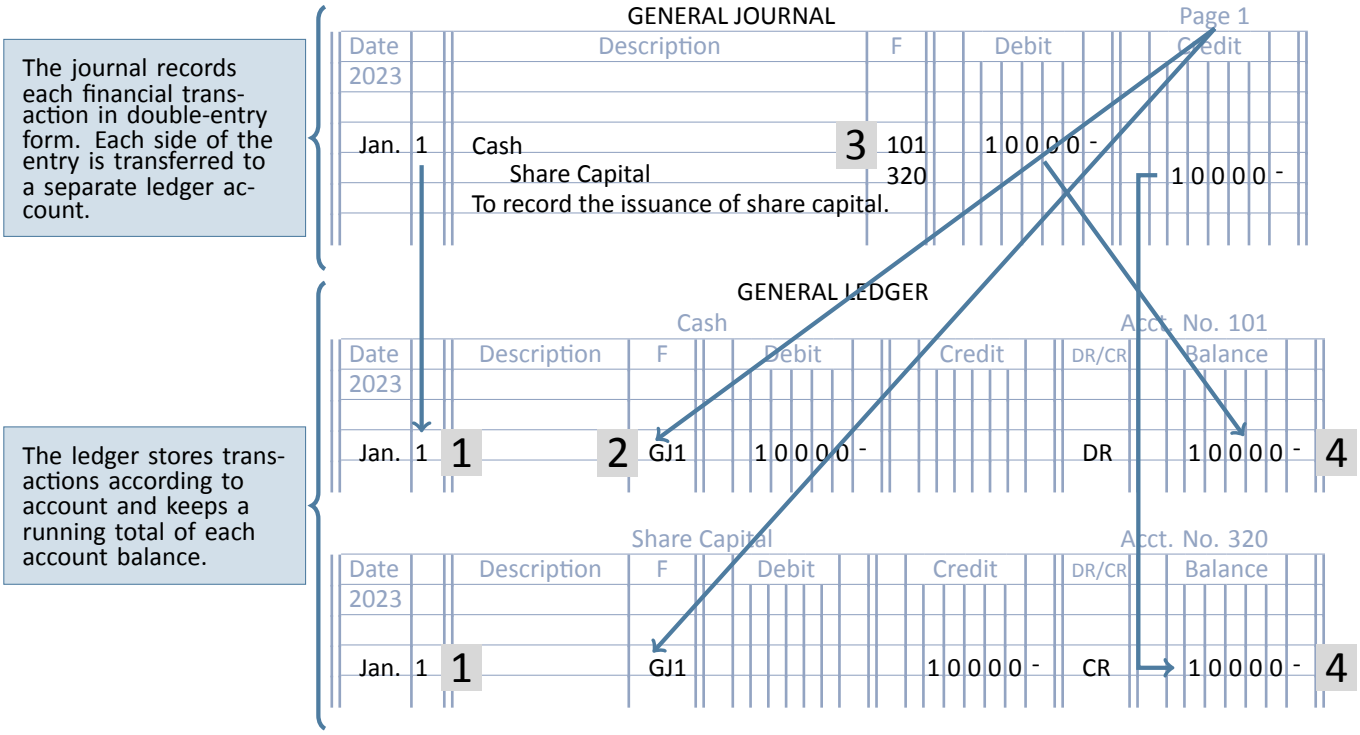


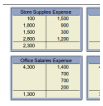

**Figure 2.3: Illustration of a Transaction Posted to Two Accounts in the General Ledger**

1. The date and amount are posted to the appropriate ledger account. Here the entry debiting Cash is posted from the journal to the Cash ledger account. The entry crediting Share Capital is then posted from the journal to the Share Capital ledger account.
2. The journal page number is recorded in the folio (F) column of each ledger account as a cross reference. In this case, the posting has been made from general journal page 1; the reference is recorded as GJ1.
3. The appropriate ledger account number is recorded in the folio (F) column of the journal to indicate the posting has been made to that particular account. Here the entry debiting Cash

has been posted to Account No. 101. The entry crediting Share Capital has been posted to Account No. 320.

4. After posting the entry, a balance is calculated in the Balance column. A notation is recorded in the column to the left of the Balance column indicating whether the balance is a debit or credit. A brief description can be entered in the Description column but this is generally not necessary since the journal includes a detailed description for each journal entry.

This manual process of recording, posting, summarizing, and preparing financial statements is cumbersome and time-consuming. In virtually all businesses, the use of accounting software automates much of the process. In this and subsequent chapters, either the T-account or the ledger account can be used in working through exercises and problems. Both formats are used to explain and illustrate concepts in subsequent chapters.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Journalizing Transactions.

## Special Journals and Subledgers

The general journal and the general ledger each act as a single all-purpose document where all the company's transactions are recorded and posted over the life of the company.

As was shown in Figure 2.2, various transactions are recorded to a general journal chronologically by date as they occurred. When companies engage in certain same-type, high-frequency transactions such as credit purchases and sales on account, special journals are often created in order to separately track information about these types of transactions. Typical special journals that companies often use are a sales journal, cash receipts journal, purchases journal and a cash disbursements journal. There can be others, depending on the business a company is involved in. The general journal continues to be used to record any transactions not posted to any of the special journals, such as:

- correcting entries
- adjusting entries
- closing entries

An example of a special journal for credit sales is shown below.

| Credit Sales Journal | | | | | | | | S1 |
|---|---|---|---|---|---|---|---|---|
| **Date** | **Billing #** | **Customer** | **Ref** | **Accounts Receivable** | **Hardware Sales** | **Lighting Sales** | **Plumbing Sales** | **GST Payable** |
| | | | | Debit | Credit | Credit | Credit | Credit |
| 2025 | | | | | | | | |
| Sept 1 | 17001 | Hardy | AR5 | $ 25,000 | $ 1,500 | | $ 22,250 | $ 1,250 |
| Sept 5 | 17002 | Smith | AR1 | 2,260 | | $ 2,147 | | 113 |
| Sept 6 | 17003 | Bergeron | AR4 | 8,000 | 5,000 | 1,000 | 1,600 | 400 |
| Sept 7 | 17004 | Douglas | AR3 | 16,000 | | | 15,200 | 800 |
| Sept 8 | 17005 | Hardy | AR5 | 115,000 | 16,000 | 45,000 | 48,250 | 5,750 |
| Sept 11 | 17006 | White | AR2 | 10,000 | | 5,000 | 4,500 | 500 |
| Totals | | | | $ 176,260 | $ 22,500 | $53,147 | $ 91,800 | $ 8,813 |
| GL account | | | | 110 | 410 | 414 | 418 | 280 |

Posted monthly to the general ledger

**Figure 2.4: Sales Journal – records credit sales**

For simplicity, the cost of goods sold is excluded from this sales journal and will be covered in chapter five of this course. The sales journal provides a quick overview of the total credit sales for the month as well as various sub-groupings of credit sales such as by product sold, GST, and customers.

The sales journal can also be expanded to include credit sales returns, and the purchases journal to include purchases returns and allowances for each accounting month. Note that purchase discounts would be recorded in the cash disbursements journal because the discount is usually claimed at the time of the cash payment to the supplier/creditor. This is also the case with sales discounts from customers which would be recorded in the cash receipts journal at the time the cash, net of the sales discount, is received. Any cash sales returns would be recorded in the cash disbursements journal.

Recall from Figure 2.3 that with accounting records that comprise only a general journal and general ledger, each transaction recorded in the general journal was posted to the general ledger. With special journals, such as the sales journal, their *monthly* totals are posted to the general ledger instead. For larger companies, these journals can be summarized and posted more frequently, such as weekly or daily, if needed.

Below are examples of other typical special journals such as a purchases journal, cash receipts journal, cash disbursements journal and the general journal. Note the different sub-groupings in each one and consider how these would be useful for managing the company's business.

**Credit Purchases Journal** P1

| Date | Invoice # | Creditor | Ref | Accounts Payable | Hardware Purchases | Lighting Purchases | Plumbing Purchases | GST Recv |
|---|---|---|---|---|---|---|---|---|
| | | | | Credit | Debit | Debit | Debit | Debit |
| 2025 | | | | | | | | |
| Sept 1 | B253 | Better and Sons | AP6 | $ 60,000 | | | $ 57,000 | $ 3,000 |
| Sept 5 | 2008 | Northward Suppliers | AP2 | 160,000 | $ 152,000 | | | 8,000 |
| Sept 6 | 15043 | Lighting Always | AP4 | 18,000 | | $ 17,100 | | 900 |
| Sept 7 | RC18 | VeriSure Mfg | AP1 | 24,000 | | | 22,800 | 1,200 |
| Sept 8 | 1102 | Pearl Lighting | AP3 | 5,000 | 2,000 | 2,750 | | 250 |
| Sept 11 | EF-1603 | Arnold Consolidated | AP5 | 1,600 | | | 1,520 | 80 |
| Totals | | | | $268,600 | $ 154,000 | $ 19,850 | $ 81,320 | $13,430 |
| GL account | | | | 210 | 510 | 514 | 518 | 180 |

**Figure 2.5: Purchases Journal – records credit purchases**

**Cash Receipts Journal** CR1

| Date | Billing # | Customer | Ref | Cash | Sales Discount | Accounts Receivable | Cash Sales | GST Payable |
|---|---|---|---|---|---|---|---|---|
| | | | | Debit | Debit | Credit | Credit | Credit |
| 2025 | | | | | | | | |
| Sept 1 | 17001 | Hardy | AR5 | $12,000 | $ 120 | $ 12,120 | | |
| Sept 6 | CS1 | Cash sale | CS1 | 1,500 | | | $1,425 | $ 75 |
| Sept 8 | 17003 | Bergeron | AR4 | 2,000 | | 2,000 | | |
| Sept 11 | 17004 | Douglas | AR3 | 20,000 | | 20,000 | | |
| Sept 12 | 17005 | Cash sale | CS2 | 3,250 | | | 3,088 | 163 |
| Sept 13 | 17006 | White | AR2 | 5,000 | | 5,000 | | |
| Totals | | | | $43,750 | $ 120 | $ 39,120 | $4,513 | $ 238 |
| GL account | | | | 102 | 402 | 110 | 410 | 280 |

**Figure 2.6: Cash Receipts Journal – records all cash receipts**

**Cash Disbursements Journal** CD1

| Date | Chq # | Payee | Ref | Cash | Purchase Discount (Inventory) | Accounts Payable | Other Disb… | Desc |
|---|---|---|---|---|---|---|---|---|
| | | | | Credit | Credit | Debit | Debit | |
| 2025 | | | | | | | | |
| Sept 1 | 101 | General Lighting Ltd. | AP22 | $14,775 | $ 225 | $ 15,000 | | |
| Sept 2 | 102 | John Bremner | SAL1 | 1,600 | | | $ 1,600 | Salary exp. |
| Sept 11 | 103 | Lighting Always | AP4 | 4,200 | | 4,200 | | |
| Sept 12 | 104 | VeriSure Mfg | AP1 | 22,500 | 225 | 22,725 | | |
| Sept 13 | 105 | Receiver General | AP 14 | 14,000 | | | 14,000 | GST Aug |
| Sept 14 | 106 | City of Edmonton | AP18 | 5,500 | | | 5,500 | Property Tax |
| Totals | | | | $62,575 | $ 450 | $ 41,925 | $ 21,100 | |
| GL account | | | | 102 | 104 | 210 | various | |

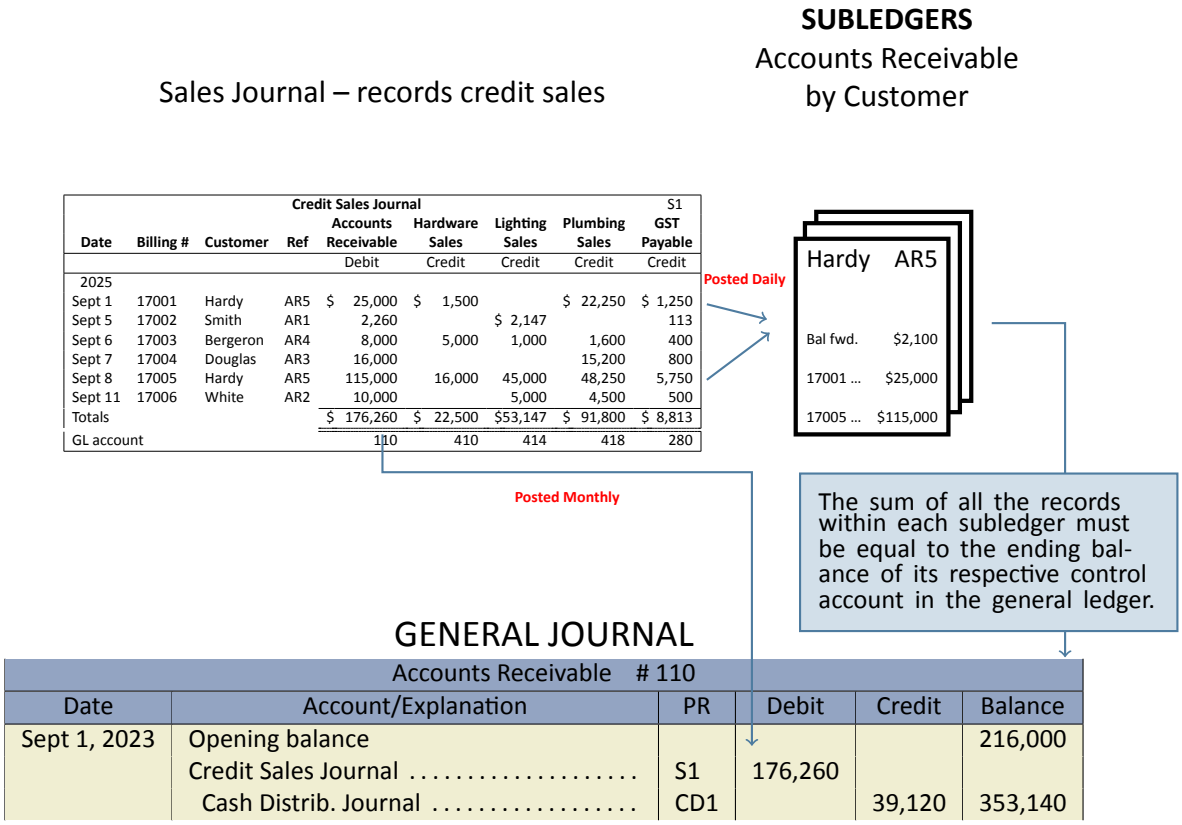
**Figure 2.7: Cash Disbursements Journal – records all cash disbursements**

| General Journal | | | | GJ1 |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Sept 30, 2025 | Bank service charges expense . . . . . | 520 | 25 | |
| | Cash . . . . . | 102 | | 25 |
| | Bank reconciliation for August | | | |
| Sept 30, 2025 | Depreciation expense . . . . . | 530 | 3,500 | |
| | Accumulated depreciation . . . . . | 118 | | 3,500 |
| | Depreciation for September | | | |
| Totals | | | 3,525 | 3,525 |

**Figure 2.8: General Journal – records all other entries including adjustments, corrections, and closing entries**

Each account that exists in the general journal must be represented by a corresponding account in the general ledger. As previously stated, each entry from the general journal is posted directly to the general ledger, if no other special journals or subledgers exist. If there are several hundreds or thousands of accounts receivable transactions for many different customers during a month, this detail cannot be easily summarized in meaningful ways. This may be fine for very small companies, but most companies need certain types of transactions sub-groupings, such as for accounts receivable, accounts payable and inventory. For this reason, subsidiary ledgers or subledgers are used to accomplish this. Subledgers typically include accounts receivable sub-grouped by customer, accounts payable by supplier, and inventory by inventory item. Monthly totals from the special journals continue to be posted to the general ledger, which now acts as a **control account** to its related subledger. **It is critical that the subledgers always balance to their respective general ledger control account, hence the name *control account*.**

Below is an example of how a special journal, such as a sales journal is posted to the subledgers and general ledger.



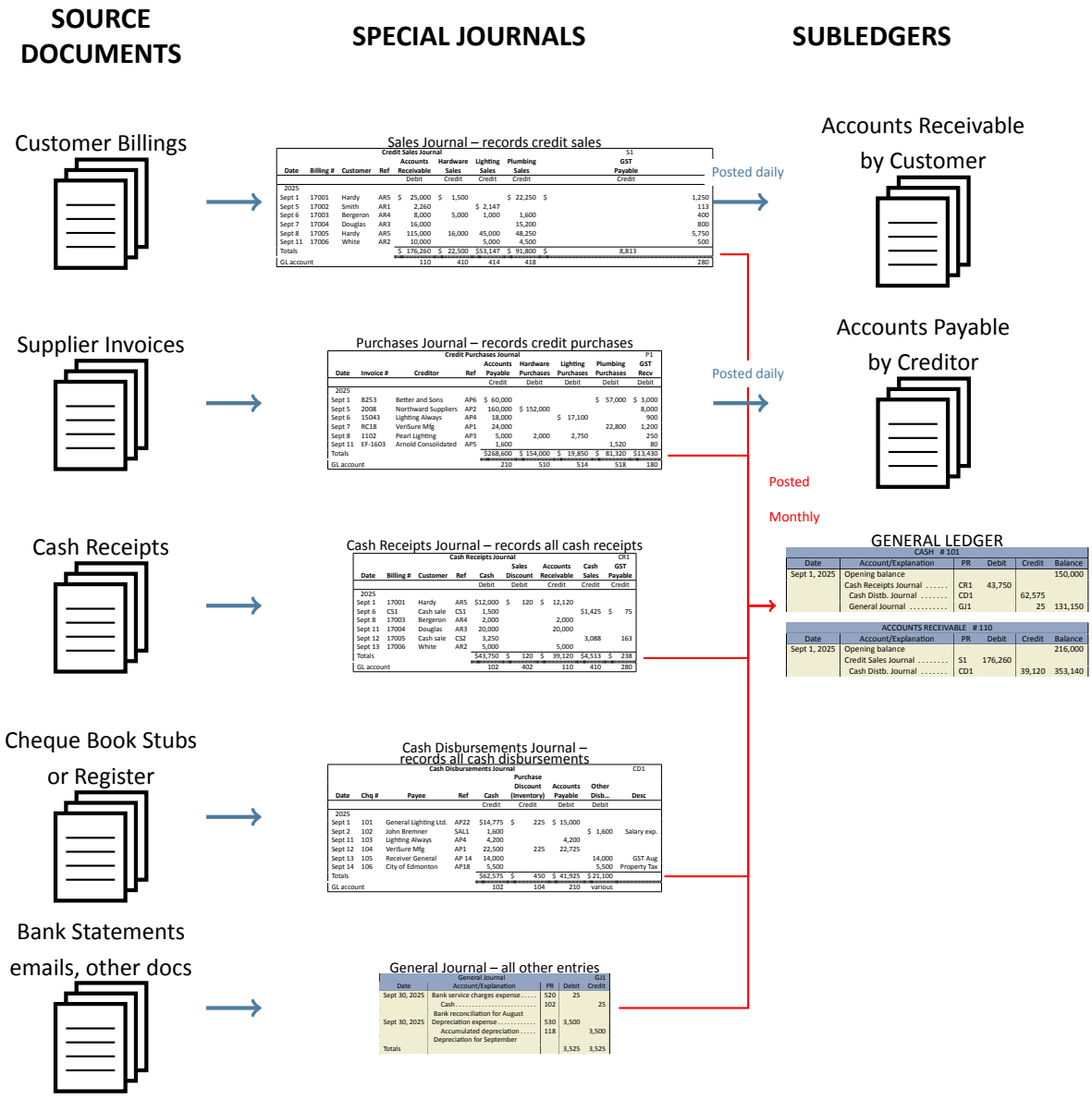

| Date | Billing # | Customer | Ref | Accounts Receivable | Hardware Sales | Lighting Sales | Plumbing Sales | GST Payable |
|---|---|---|---|---|---|---|---|---|
| | | | | Debit | Credit | Credit | Credit | Credit |
| 2025 | | | | | | | | |
| Sept 1 | 17001 | Hardy | AR5 | $ 25,000 | $ 1,500 | | $ 22,250 | $ 1,250 |
| Sept 5 | 17002 | Smith | AR1 | 2,260 | | $ 2,147 | | 113 |
| Sept 6 | 17003 | Bergeron | AR4 | 8,000 | 5,000 | 1,000 | 1,600 | 400 |
| Sept 7 | 17004 | Douglas | AR3 | 16,000 | | | 15,200 | 800 |
| Sept 8 | 17005 | Hardy | AR5 | 115,000 | 16,000 | 45,000 | 48,250 | 5,750 |
| Sept 11 | 17006 | White | AR2 | 10,000 | | 5,000 | 4,500 | 500 |
| Totals | | | | $ 176,260 | $ 22,500 | $53,147 | $ 91,800 | $ 8,813 |
| GL account | | | | 110 | 410 | 414 | 418 | 280 |

| Date | Account/Explanation | PR | Debit | Credit | Balance |
|---|---|---|---|---|---|
| Sept 1, 2023 | Opening balance | | | | 216,000 |
| | Credit Sales Journal ..... | S1 | 176,260 | | |
| | Cash Distrib. Journal ..... | CD1 | | 39,120 | 353,140 |

Note how the general ledger can now be posted using the monthly totals from the sales journal instead of by individual transaction. Each line item within the sales journal is now posted on a daily basis directly to the subledger by customer instead, and balanced to the accounts receivable control balance in the general ledger. The subledger enables the company to quickly determine which customers owe money and details about those amounts.

At one time, recording transactions to the various journals and ledgers was all done manually as illustrated above. Today, accounting software makes this process easy and efficient. Data for each transaction is entered into the various data fields within the software transaction record. Once the transaction entry has been input and saved, the software automatically posts the data to any special journals, subledgers and general ledger. At any time, the accountant can easily obtain summary or detailed reports including a trial balance, accounts receivable by customer, accounts payable by creditor, inventory by inventory item, and so on.

Below is a flowchart that illustrates the flow of the information for a manual system from the source documents to the special journals, the subledgers and to the general ledger. This illustration also helps to give a sense of how the data would flow using accounting software.




## 2.5 The Accounting Cycle

LO5 – Define the accounting cycle.

In the preceding sections, the January transactions of Big Dog Carworks Corp. were used to demonstrate the steps performed to convert economic data into financial information. This conversion was carried out in accordance with the basic double-entry accounting model. These steps are summarized in Figure 2.9.

**Step 1: Transactions are analyzed and journalized.**
*Journalizing* consists of analyzing transactions as they occur to see how they affect the accounting equation. Then, the transactions are recorded chronologically in the general journal.

**Step 2: Transactions are summarized by account.**
*Posting* consists of transferring debits and credits from the general journal to the appropriate general ledger accounts.

**Step 3: The equality of debits and credits is proved.**
A trial balance is prepared, listing account numbers and names along with account balances to prove the equality of the debits and credits.

**Step 4: The summarized transactions are communicated.**
*Preparing the financial statements* consists of using the balances listed in the columns of the trial balance to prepare the income statement, statement of changes in equity, and balance sheet.

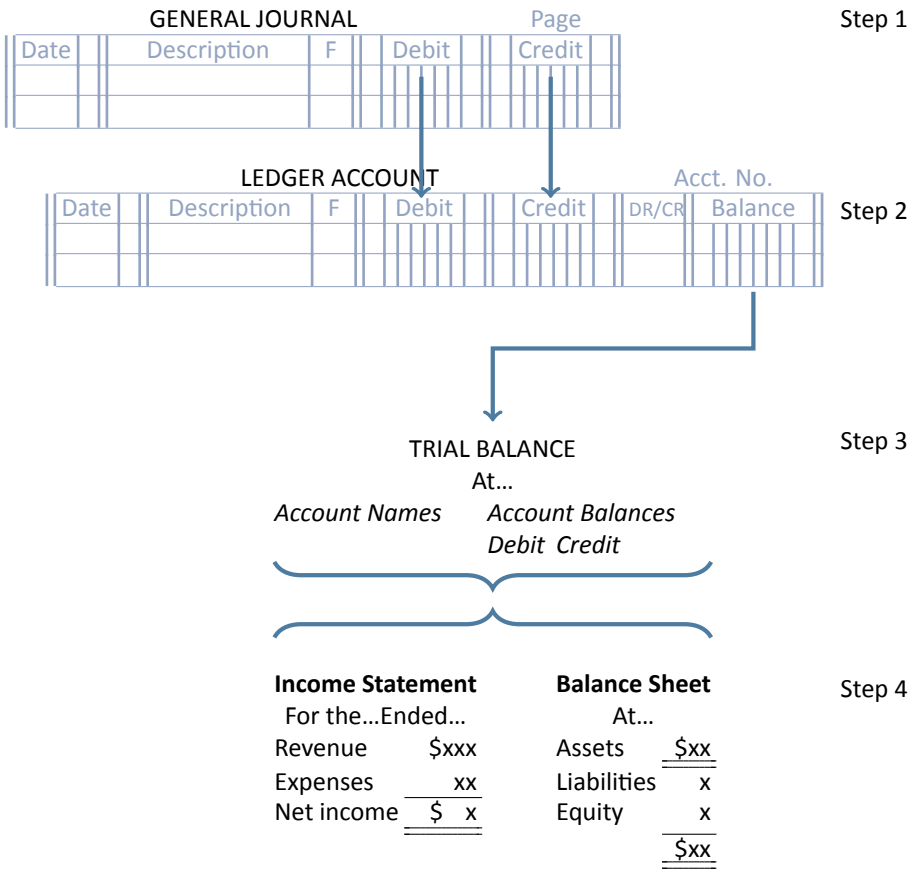



**Figure 2.9: Illustrating the Steps in the Accounting Cycle**

The sequence just described, beginning with the journalising of the transactions and ending with the communication of financial information in financial statements, is commonly referred to as the **accounting cycle**. There are additional steps involved in the accounting cycle and these will be introduced in Chapter 3.

## Summary of Chapter 2 Learning Objectives

### LO1 – Describe asset, liability, and equity accounts, identifying the effect of debits and credits on each.

Assets are resources that have future economic benefits such as cash, receivables, prepaids, and machinery. Increases in assets are recorded as debits and decreases as credits. Liabilities represent an obligation to pay an asset in the future and include payables and unearned revenues. Inrceases in liabilities are recorded as credits and decreases as debits. Equity represents the net assets owned by the owners and includes share capital, dividends, revenues, and expenses. In-

creases in equity, caused by the issuance of shares and revenues, are recorded as credits, and decreases in equity, caused by dividends and expenses, are recorded as debits. The following summary can be used to show how debits and credits impact the types of accounts.

### LO2 – Analyze transactions using double-entry accounting.

Double-entry accounting requires that each transaction be recorded in at least two accounts where the total debits always equal the total credits. The double-entry accounting rule is rooted in the accounting equation: Assets = Liabilities + Equity.

### LO3 – Prepare a trial balance and explain its use.

To help prove the accounting equation is in balance, a trial balance is prepared. The trial balance is an internal document that lists all the account balances at a point in time. The total debits must equal total credits on the trial balance. The trial balance is used in the preparation of financial statements.

### LO4 – Record transactions in a general journal and post in a general ledger.

The recording of financial transactions was introduced in this chapter using T-accounts, an illustrative tool. A business actually records transactions in a general journal, a document which chronologically lists each debit and credit journal entry. To summarize the debit and credit entries by account, the entries in the general journal are posted (or transferred) to the general ledger. The account balances in the general ledger are used to prepare the trial balance.

### LO5 – Define the accounting cycle.

Analyzing transactions, journalizing them in the general journal, posting from the general journal into the general ledger, preparing the trial balance, and generating financial statements are steps followed each accounting period. These steps form the core of the accounting cycle. Additional steps involved in the accounting cycle will be introduced in Chapter 3.

## Discussion Questions

1. Why is the use of a transactions worksheet impractical in actual practice?

2. What is an ‘account’? How are debits and credits used to record transactions?
3. Some tend to associate “good” and “bad” or “increase” and “decrease” with credits and debits. Is this a valid association? Explain.
4. The pattern of recording increases as debits and decreases as credits is common to asset and expense accounts. Provide an example.
5. The pattern of recording increases and credits and decreases as debits is common to liabilities, equity, and revenue accounts. Provide an example.
6. Summarise the rules for using debits and credits to record assets, expenses, liabilities, equity, and revenues.
7. What is a Trial Balance? Why is it prepared?
8. How is a Trial Balance used to prepare financial statements?
9. A General Journal is often called a book of original entry. Why?
10. The positioning of a debit-credit entry in the General Journal is similar in some respects to instructions written in a computer program. Explain, using an example.
11. What is a General Ledger? Why is it prepared?
12. What is a Chart of Accounts? How are the accounts generally arranged and why?
13. List the steps in the accounting cycle.

## Exercises

---

**EXERCISE 2–1 (LO1) Accounts**

Below is a list of various accounts:

| a. | b. | | | | |
|---|---|---|---|---|---|
| | | Unearned consulting fees | | | Vehicles |
| | | Prepaid insurance | | | Depreciation expense |
| | | Office supplies | | | Interest income |
| | | Notes receivable | | | Interest expense |
| | | Insurance fee revenue | | | Furniture |
| | | Unearned insurance fee revenue | | | Utilities payable |
| | | Salary and benefits expense | | | Unearned rent revenue |
| | | Small tools and supplies | | | Retained earnings |
| | | Service fees earned | | | Salaries and benefits payable |
| | | Service fees revenue | | | Compensation expense |
| | | Notes payable | | | Interest earned |
| | | Buildings | | | Meals and mileage expense |
| | | Rent payable | | | Unearned service fees |
| | | Share capital | | | Equipment |

**Required**:

**a.** Identify each account as either an asset (A), liability (L), equity (E), revenue (R), or expense (E).

**b.** Identify whether the normal balance of each account is a debit (DR) or credit (CR).

---

**EXERCISE 2–2 (LO1) Accounts**

**Required**: Using the list from EXERCISE 2–1, identify if a debit or credit is needed to decrease the normal balance of each account.

---

**EXERCISE 2–3 (LO2)**

**Required**: Record the debit and credit for each of the following transactions (transaction 1 is done for you):

| | Assets | | Liabilities | | Equity | |
|---|---|---|---|---|---|---|
| | *Debit* (increase) | *Credit* (decrease) | *Debit* (decrease) | *Credit* (increase) | *Debit* (decrease) | *Credit* (increase) |
| 1. Purchased a $10,000 truck on credit. | 10,000 | | | 10,000 | | |
| 2. Borrowed $5,000 cash from the bank. | | | | | | |
| 3. Paid $2,000 of the bank loan in cash. | | | | | | |
| 4. Paid $600 in advance for a one-year insurance policy. | | | | | | |
| 5. Received $500 in advance from a renter for next month's rental of office space. | | | | | | |

---

**EXERCISE 2–4 (LO2)**

**Required**: Record the debit and credit in the appropriate account for each of the following transactions (transaction 1 is done for you):

| | *Debit* | *Credit* |
|---|---|---|
| 1. Issued share capital for cash. | Cash | Share Capital |
| 2. Purchased equipment on credit. | | |
| 3. Paid for a one-year insurance policy. | | |
| 4. Billed a customer for repairs completed today. | | |
| 5. Paid this month's rent. | | |
| 6. Collected the amount billed in transaction 4 above. | | |
| 7. Collected cash for repairs completed today. | | |
| 8. Paid for the equipment purchased in transaction 2 above. | | |
| 9. Signed a union contract. | | |
| 10. Collected cash for repairs to be made for customers next month. | | |
| 11. Transferred this month's portion of prepaid insurance that was used to Insurance Expense. | | |

---

**EXERCISE 2–5 (LO2) Using T-accounts**

Below are various transactions for the month of August, 2024, for BOLA Co. This is their first month of operations.

1. Issued share capital in exchange for $3,000 cash.

2. Received an invoice from the utilities company for electricity in the amount of $200.

3. Bank approved a loan and deposited $10,000 into the company's bank account.
4. Paid employee salaries in the amount of $2,000.
5. Received repair services worth $5,000 from a supplier in exchange for a note due in thirty days.
6. Completed service work for a European customer. Invoiced $8,000 EURO (European funds). The Canadian currency equivalent is $12,000 CAD. (hint: Recall the monetary unit principle.)
7. Completed $7,000 of service work for a customer on account.
8. Purchased $1,000 of equipment, paying cash.
9. Received $8,000 EURO ($12,000 CAD) cash for service work done regarding item (6).
10. Rent of $5,000 cash was paid for the current month's rent.
11. Made a payment of $1,500 cash as a loan payment regarding item (3). The payment covered $150 for interest expense and the balance of the cash payment was to reduce the loan balance owing.
12. Reimbursed $25 in cash to an employee for use of his personal vehicle for company business for a business trip earlier that day.
13. Received a cash of $5,000 regarding the service work for item (7).
14. Vehicle worth $30,000 purchased in exchange for $10,000 cash and $20,000 note due in six months.
15. Paid the full amount of the utilities invoice regarding item (2).
16. Purchased $3,000 of furniture on account.
17. Completed $2,000 of service work for a customer and collected cash.
18. Received a cheque in the amount of $2,000 from a customer for service work to be done in two months.
19. Purchased office supplies for $3,000 on account.
20. Completed a project for a customer and billed them $8,000 for the service work.
21. Purchased a laptop computer for $2,500 in exchange for a note payable.
22. September rent of $5,000 was paid two weeks in advance, on August 15.

**Required**: Create a separate T-account for each asset, liability, equity, revenue and expense account affected by the transactions above. Record the various transactions debits and credits into the applicable T-account (similar to the two T-accounts shown in Section 2.1, under the heading

T-accounts, for Cash and Accounts payable). Calculate and record the ending balance for each T-account. (Hint: Include the reference to the transaction number for each item in the T-accounts, to make it easier to review later, if the accounts contain any errors.)

---

**EXERCISE 2–6 (LO3) Preparing a Trial Balance**

**Required**: Using the T-accounts prepared in EXERCISE 2–5, prepare an August 31, 2024, trial balance for the company based on the balances in the T-accounts.

---

**EXERCISE 2–7 (LO3) Preparing Financial Statements**

**Required**: Using the trial balance in EXERCISE 2–6, prepare the August 31, 2024, income statement, statement of changes in equity and the balance sheet for the company based on the balances in the T-accounts.

---

**EXERCISE 2–8 (LO2)** **Watch video**

**Required**: Post the following transactions to the appropriate accounts:

(1) Issued share capital for $5,000 cash (posted as an example).

(2) Paid $900 in advance for three months' rent, $300 for each month.

(3) Billed $1,500 to customers for repairs completed today.

(4) Purchased on credit $2,000 of supplies to be used next month.

(5) Borrowed $7,500 from the bank.

(6) Collected $500 for the amount billed in transaction (3).

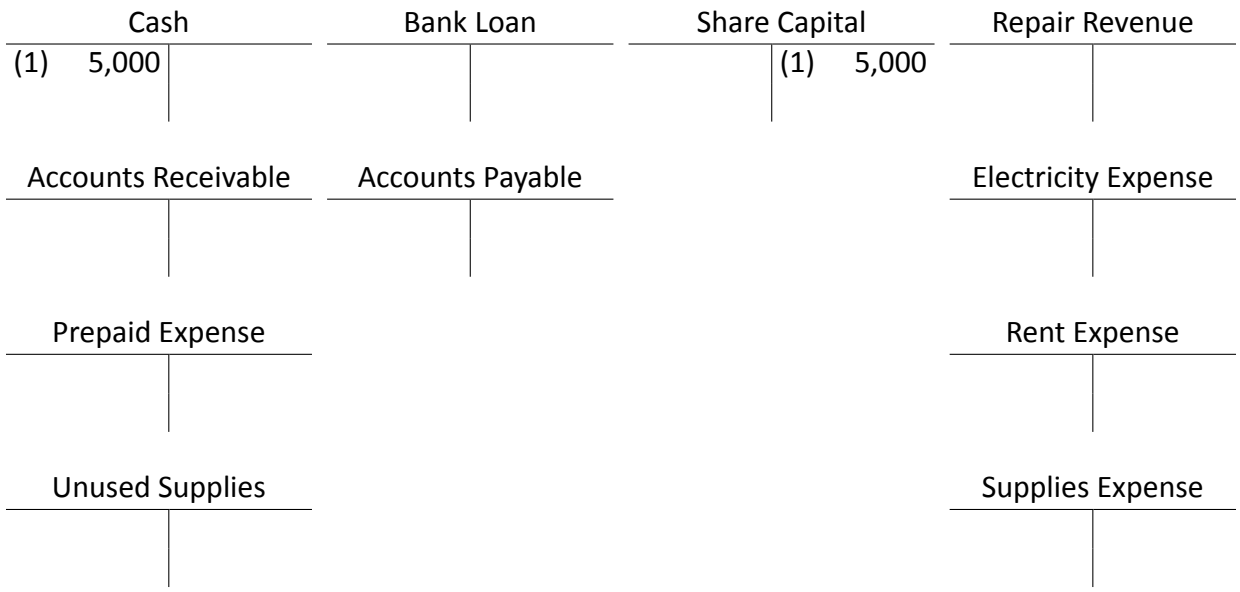
(7) Received a $200 bill for electricity used to date (the bill will be paid next month).

(8) Repaid $2,500 of the bank loan.

(9) Used $800 of the supplies purchased in transaction (4).

(10) Paid $2,000 for the supplies purchased in transaction (4).

(11) Recorded the use of one month of the rent paid for in transaction (2).

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**EXERCISE 2–9 (LO3)**

The following Trial Balance was prepared from the books of Cross Corporation at its year-end, December 31, 2023. After the company's bookkeeper left, the office staff was unable to balance the accounts or place them in their proper order. Individual account balances are correct, but debits may be incorrectly recorded as credits and vice-versa.

| *Account Title* | *Account Balances* | |
|---|---|---|
| | *Debits* | *Credits* |
| Cash | $120,400 | |
| Commissions Earned | 5,000 | |
| Share Capital | | $170,000 |
| Accounts Payable | 30,000 | |
| Insurance Expense | 100 | |
| Land | | 8,000 |
| Building | | 120,000 |
| Rent Expense | | 1,000 |
| Accounts Receivable | | 26,000 |
| Unused Supplies | 6,000 | |
| Supplies Expense | | 300 |
| Loan Payable | | 80,000 |
| Salaries Expense | | 3,000 |
| Telephone Expense | 200 | |
| Totals | $161,700 | $408,300 |

**Required**: Prepare a corrected Trial Balance showing the accounts in proper order and balances in the correct column. List expenses in alphabetical order. Total the columns and ensure total debits equal total credits.

---

**EXERCISE 2–10 (LO4)** Watch video

**Required**: Prepare journal entries for each of the following transactions:

(a) Issued share capital for $3,000 cash.

(b) Purchased $2,000 of equipment on credit.

(c) Paid $400 cash for this month's rent.

(d) Purchased on credit $4,000 of supplies to be used next month.

(e) Billed $2,500 to customers for repairs made to date.

(f) Paid cash for one-half of the amount owing in transaction (d).

(g) Collected $500 of the amount billed in transaction (e).

(h) Sold one-half of the equipment purchased in transaction 2 above for $1,000 in cash.

**EXERCISE 2–11 (LO2,4)**

**Required**: Prepare the journal entries and likely descriptions of the eleven transactions that were posted to the following General Ledger accounts for the month ended January 31, 2023. Do not include amounts. For instance, the first entry would be:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Cash . . . . . | | XX | |
| | Share Capital . . . . . | | | XX |
| | (1) To record issuance of share capital | | | |

| Cash | |
|---|---|
| 1 | 2 |
| 3 | 5 |
| 8 | 10 |
| 11 | |

| Bank Loan | |
|---|---|
| | 11 |

| Share Capital | |
|---|---|
| | 1 |

| Repair Revenue | |
|---|---|
| | 3 |
| | 4 |

| Accounts Receivable | |
|---|---|
| 4 | |

| Accounts Payable | |
|---|---|
| 10 | 2 |
| | 6 |
| | 7 |

| Electricity Expense | |
|---|---|
| 9 | |

| Prepaid Expense | |
|---|---|
| 5 | 9 |

| Rent Expense | |
|---|---|
| 7 | |

| Unused Supplies | |
|---|---|
| 2 | 8 |

| Supplies Expense | |
|---|---|
| 6 | |

**EXERCISE 2–12 (LO2,3,4)**

The following journal entries were prepared for Elgert Corporation for its first month of operation, January 2023.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jan. 1 | Cash | | 10,000 | |
| | Share Capital | | | 10,000 |
| | To record the issuance of shares. | | | |
| 5 | Rent Expense | | 200 | |
| | Cash | | | 200 |
| | To record the payment of rent for the month. | | | |
| 9 | Unused Supplies | | 4,000 | |
| | Cash | | | 4,000 |
| | To record the purchase of supplies. | | | |
| 11 | Cash | | 1,300 | |
| | Service Revenue | | | 1,300 |
| | To record service revenue earned. | | | |
| 28 | Truck Operation Expense | | 450 | |
| | Accounts Payable | | | 450 |
| | To record truck repairs. | | | |
| 30 | Salaries Expense | | 1,800 | |
| | Cash | | | 1,800 |
| | To record payment of salaries for the month. | | | |
| 31 | Accounts Receivable | | 1,600 | |
| | Service Revenue | | | 1,600 |
| | To record service revenue earned during the month. | | | |
| 31 | Supplies Expense | | 200 | |
| | Unused Supplies | | | 200 |
| | To record supplies used during the month. | | | |

**Required**:

**a.** Prepare necessary General Ledger T-accounts and post the transactions.

**b.** Prepare a Trial Balance at January 31, 2023.

**c.** Prepare an Income Statement and Statement of Changes in Equity for the month ended January 31, 2023 and a Balance Sheet at January 31, 2023.

---

**EXERCISE 2–13 (LO4) Correcting Errors in Journal Entries**

Below are transactions that contain errors in the journal entry.

1. Received an invoice from a supplier for advertising in the amount of $150.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Advertising expense | | 1,500 | |
| | Cash | | | 1,500 |

2. Paid employee salaries in the amount of $2,200.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Cash | | 2,200 | |
| | Salaries expense | | | 2,200 |

3. Received repair services worth $1,500 from a supplier in exchange for a note due in sixty days.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Prepaid repairs | | 1,500 | |
| | Note payable | | | 1,500 |

4. Completed service work for a British customer. Invoiced $5,000 GBP (British pounds Sterling funds). The Canadian currency equivalent is $8,400 CAD. (Hint: Recall the monetary unit principle.)

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Accounts receivable | | 5,000 | |
| | Revenue | | | 5,000 |

5. Rent of $5,000 cash was paid for the current month's rent.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Cash | | 500 | |
| | Rent expense | | | 500 |

6. Received a cheque in the amount of $4,000 from a customer for service work to be started in three months.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Cash | | 4,000 | |
| | Revenue | | | 4,000 |

7. Completed a project for a customer and billed them $8,000 for the service work.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Accounts payable | | 8,000 | |
| | Revenue | | | 8,000 |

8. Rent of $10,000 for the next six months was paid in advance.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Rent expense . . . . . | | 10,000 | |
| | Cash . . . . . | | | 10,000 |

**Required**: Record the correcting journal entries. (Hint: One method is to reverse the incorrect entry and record the correct entry and a second method is to record the correcting amounts to the applicable accounts only.)

## Problems

---

**PROBLEM 2–1 (LO3)**

The following account balances are taken from the records of Fox Creek Service Limited at October 31, 2023 after its first year of operation:

| | | | |
|---|---|---|---|
| Accounts Payable | $9,000 | Insurance Expense | $ 500 |
| Accounts Receivable | 6,000 | Repair Revenue | 19,000 |
| Advertising Expense | 2,200 | Supplies Expense | 800 |
| Bank Loan | 5,000 | Telephone Expense | 250 |
| Cash | 1,000 | Truck | 9,000 |
| Share Capital | 2,000 | Truck Operation Expense | 1,250 |
| Commissions Expense | 4,500 | Wages Expense | 4,000 |
| Equipment | 7,000 | Wages Payable | 1,500 |

**Required**:

1. Prepare a Trial Balance at October 31, 2023.
2. Prepare an Income Statement and Statement of Changes in Equity for the year ended October 31, 2023.
3. Prepare a Balance Sheet at October 31, 2023.

---

**PROBLEM 2–2 (LO1,2,3,4)**

The following ledger accounts were prepared for Davidson Tool Rentals Corporation during the first month of operation ending May 31, 2023. No journal entries were prepared in support of the amounts recorded in the ledger accounts.

| Cash | | | 101 |
|---|---|---|---|
| May 1 | 5,000 | May 11 | 1,000 |
| 6 | 2,000 | 16 | 500 |
| 10 | 1,500 | 20 | 300 |
| 15 | 1,200 | 22 | 600 |
| 21 | 800 | 28 | 400 |
| | | 29 | 3,500 |

| Accounts Receivable | | | 110 |
|---|---|---|---|
| May 5 | 3,000 | May 10 | 1,500 |
| 18 | 2,500 | 15 | 1,200 |

| Prepaid Advertising | | | 160 |
|---|---|---|---|
| May 16 | 500 | May 31 | 250 |

| Unused Supplies | | | 173 |
|---|---|---|---|
| May 20 | 300 | May 30 | 100 |

| Equipment | | | 183 |
|---|---|---|---|
| May 11 | 2,000 | May 21 | 800 |

| Accounts Payable | | | 210 |
|---|---|---|---|
| May 22 | 600 | May 11 | 1,000 |
| | | 23 | 150 |
| | | 24 | 1,100 |

| Share Capital | | | 320 |
|---|---|---|---|
| | | May 1 | 5,000 |

| Service Revenue | | | 470 |
|---|---|---|---|
| | | May 5 | 3,000 |
| | | 6 | 2,000 |
| | | 18 | 2,500 |

| Advertising Expense | | | 610 |
|---|---|---|---|
| May 31 | 250 | | |

| Commissions Expense | | | 615 |
|---|---|---|---|
| May 24 | 1,100 | | |

| Rent Expense | | | 654 |
|---|---|---|---|
| May 28 | 400 | | |

| Salaries Expense | | | 656 |
|---|---|---|---|
| May 29 | 3,500 | | |

| Supplies Expense | | | 668 |
|---|---|---|---|
| May 30 | 100 | | |

| Telephone Expense | | | 669 |
|---|---|---|---|
| May 23 | 150 | | |

**Required**:

1. Reconstruct the transactions that occurred during the month and prepare journal entries to record these transactions, including appropriate descriptions. Include accounts numbers (Folio) using the Chart of Accounts provided. Calculate the balance in each account.

2. Total the transactions in each T-account above. Prepare a Trial Balance in proper order (list assets, liabilities, equity, revenue, then expenses) at May 31, 2023.

**PROBLEM 2–3 (LO1,2,4)**

The following balances appeared in the General Ledger of Fenton Table Rentals Corporation at April 1, 2023.

| | | | |
|---|---|---|---|
| Cash | $1,400 | Accounts Payable | $2,000 |
| Accounts Receivable | 3,600 | Share Capital | 4,350 |
| Prepaid Rent | 1,000 | | |
| Unused Supplies | 350 | | |

The following transactions occurred during April:

(a) Collected $2,000 cash owed by a customer.

(b) Billed $3,000 to customers for tables rented to date.

(c) Paid the following expenses: advertising, $300; salaries, $2,000; telephone, $100.

(d) Paid half of the accounts payable owing at April 1.

(e) Received a $500 bill for April truck repair expenses.

(f) Collected $2,500 owed by a customer.

(g) Billed $1,500 to customers for tables rented to date.

(h) Transferred $500 of prepaid rent to rent expense.

(i) Counted $200 of supplies on hand at April 30; recorded the amount used as an expense.

**Required**: Prepare journal entries to record the April transactions.

**PROBLEM 2–4 (LO1,2,4)**

The following transactions occurred in Thorn Accounting Services Inc. during August 2023, its first month of operation.

Aug. 1 Issued share capital for $3,000 cash.
1 Borrowed $10,000 cash from the bank.
1 Paid $8,000 cash for a used truck.
4 Paid $600 for a one-year truck insurance policy effective August 1.
5 Collected $2,000 fees in cash from a client for work performed today (recorded as Fees Earned).
7 Billed $5,000 fees to clients for services performed to date (recorded as Fees Earned).
9 Paid $250 for supplies used to date.
12 Purchased $500 of supplies on credit (recorded as Unused Supplies).
15 Collected $1,000 of the amount billed on August 7.
16 Paid $200 for advertising in The News during the first two weeks of August.
20 Paid half of the amount owing for the supplies purchased on August 12.
25 Paid cash for the following expenses: rent for August, $350; salaries, $2,150; telephone, $50; truck repairs, $250.
28 Called clients for payment of the balance owing from August 7.
29 Billed $6,000 of fees to clients for services performed to date (recorded as Fees Earned).
31 Transferred the amount of August's truck insurance ($50) to Insurance Expense.
31 Counted $100 of supplies still on hand (recorded the amount used as Supplies Expense).

**Required**: Prepare journal entries to record the August transactions.

---

**PROBLEM 2–5 (LO4) Challenge Question – Errors in the Trial Balance**

Below is the trial balance for Cushio Corp. which contains a number of errors:

Cushio Corp.
Trial Balance
At August 31, 2024

| | Incorrect | |
|---|---|---|
| | Debit | Credit |
| Cash | $102,000 | |
| Accounts receivable | 59,730 | |
| Prepaid expenses | 2,000 | |
| Office supplies inventory | 5,500 | |
| Equipment | 115,000 | |
| Accounts payable | | $ 74,500 |
| Unearned revenue | | 50,000 |
| Share capital | | 25,000 |
| Retained earnings | | 50,500 |
| Revenue | | 245,000 |
| Repairs expense | 1,000 | |
| Rent expense | 25,000 | |
| Advertising expense | 24,500 | |
| Salaries expense | 115,000 | |
| | $449,730 | $445,000 |

The following errors were discovered:

1. Cushio collected $5,000 from a customer and posted a debit to Cash but did not post a credit entry to accounts receivable.
2. Cushio completed service work for a customer for $5,000 and debited accounts receivable but credited unearned revenue.
3. Cushio received cash of $583 from a customer as payment on account and debited cash for $583, but incorrectly credited accounts receivable for $853.
4. Cushio did not post an invoice of $500 received for repairs.
5. Cushio purchased equipment for $5,000 on account and posted the transaction as a debit to accounts payable and a credit to equipment.
6. Cushio purchased advertising services for cash of $6,000 that will be published in the newspapers over the next six months. This transaction was posted as a debit to advertising expense and a credit to cash for $6,000.

**Required**: Prepare a corrected trial balance. (Hint: Using T-accounts would be helpful.)

**PROBLEM 2–6 (LO4) Challenge Question – Transactions, Trial Balance, and Financial Statements**

Stellar Services Ltd. is an engineering firm that provides electrical engineering consulting services to various clients. Below are the account balances in its General Ledger as at November 30, 2023. All accounts have normal balances as explained in the text.

Stellar Services Ltd.
Trial Balance
At November 30, 2023

| | |
|---|---|
| Accounts payable | $115,000 |
| Accounts receivable | 85,000 |
| Cash | 150,000 |
| Building/warehouse | – |
| Equipment | 45,000 |
| Furniture | 15,000 |
| Land | – |
| Notes payable | 20,000 |
| Office equipment | – |
| Office supplies | 7,000 |
| Prepaid expenses | – |
| Repairs expense | 500 |
| Retained earnings | 90,000 |
| Salaries expense | 32,000 |
| Service revenue | 25,000 |
| Share capital | 108,000 |
| Unearned service revenue | – |
| Utilities expense | 4,500 |
| Vehicle | 19,000 |

Listed below are activities for Stellar Services Ltd. for the month of December, 2023:

a. Stellar ordered $3,500 in new software from a software supplier. It will be paid when it is ready to install in three weeks.

b. Paid $12,000 for a two-year insurance policy to begin January 1, 2024.

c. Paid one half of the outstanding accounts payable.

d. Hired a new employee who will start up January 1, 2024. His salary will be $2,500 every two weeks.

e. Received cash of $200,000 from a client for a $1,000,000 consulting contract. Work will commence in March.

f. Booked a conference room at a hotel for a presentation to potential customers scheduled for January 15. The $600 rental fee will be paid January 1.

g. Met with a client's lawyer about a fire that destroyed a portion of the client's building. The client is planning to sue Stellar for $300,000 based on some previous consulting services Stellar provided to the client.

h. Completed four electrical inspections today on credit for $3,000 each.

i. Collected from two of the credit customers from item 8.

j. Received $20,000 from a client in partial payment for services to be provided next year.

k. Borrowed $150,000 from their bank by signing a note payable due on July 31, 2025.

l. John Stellar invested $30,000 cash and engineering equipment with a fair value of $10,000 in exchange for capital shares.

m. Stellar rented some additional office space and paid $18,000 for the next six month's rent.

n. Purchased land and a small warehouse for $50,000 cash and a long-term note payable for the balance. The land was valued at $250,000 and the warehouse at $60,000.

o. Signed an agreement with a supplier for equipment rental for a special project to begin on January 23, 2024. A deposit for $300 is to be paid on January 1.

p. Completed $30,000 of services for a client which is payable in 30 days.

q. Purchased $8,000 of equipment for $5,000 cash and a trade-in of some old equipment that originally was recorded at $3,000.

r. Paid $1,000 in cash dividends.

s. Refunded the client $2,000 due to a complaint about the consulting services provided in item 16.

t. Paid salaries of $35,000.

u. Received a bill for water and electricity in the amount of $1,800 for December, which will be paid on January 15.

v. Purchased some office equipment for $5,000 and office supplies for $2,000 on account.

w. Placed an order with a supplier for $10,000 of drafting supplies to be delivered January 10. This must be paid by January 25.

**Required**:

1. Prepare all required journal entries for December.
2. Prepare the income statement and the statement of changes in equity for the month ended December 31, 2023 and the balance sheet as at December 31, 2023. (Hint: Using T-accounts would be helpful.)

---

**PROBLEM 2–7 (LO4) Special Journals and Subledgers**

The following are selected transactions from December, 2025 for Readem & Weep Sad Books Co. Ltd., who purchases and sells books for a profit.

**Required:** Complete the schedule based on the information in Section 2.4, Special Journals and Subledgers from this chapter. If a transaction has no applicable subledger, leave answer blank.

| Journals | | Subledgers | |
|---|---|---|---|
| Sales | S | Accounts Receivable | AR |
| Purchases | P | Accounts Payable | AP |
| Cash Receipts | CR | Merchandise Inventory | MI |
| Cash Disbursements | CD | | |
| General Journal | GJ | | |

| Date | Transaction | Journal | Subledger |
|---|---|---|---|
| Dec 1 | Issued shares to the company's founder for cash | | |
| 1 | Issued a cheque for rent to the building owner | | |
| 2 | Purchased 100 books on credit from the publisher | | |
| 4 | Borrowed money from bank (i.e. a note payable) | | |
| 5 | Purchased office furniture on account | | |
| 6 | Return 5 books to the publisher due to missing pages | | |
| 12 | Sold 20 books to Fred's Cigar Store on account (credit) | | |
| 13 | Paid cash for a two-year insurance policy effective immediately | | |
| 15 | Paid cash for some office supplies | | |
| 19 | Issued a cheque to the bank for the note payable interest | | |
| 20 | Hired an employee and paid her first week's salary in cash | | |
| 22 | Sold 10 books for cash | | |
| 27 | Fred's Cigar Store returned five of the books purchased earlier and the amount owing was adjusted (accounts receivable) | | |
| 27 | Received cash from Fred's Cigar Store for amount owing | | |
| 28 | Found an error in the accounting records and recorded a correcting entry | | |
| 29 | Received cash from a customer for 100 books. 50% of the books will be sent immediately and the remained to be sent in January | | |
| 30 | A cheque was issued for rent for January, 2026 | | |
| 30 | Dividends were paid in cash to the company founder | | |

---

**PROBLEM 2–8 (LO4) Special Journals and Subledgers**

Listed below are transactions for the first month of operations for Harmand Ltd., a consulting company who provides engineering consulting services and also sells vintage model airplanes (cost of goods sold ignored for simplicity).

June 1 Purchased equipment on credit from Bradley & Co., $12,000.
2 Billed consulting services completed for Cooper Co., Invoice #17001 for $8,000.
3 Issued cheque #601 to LRS Properties Ltd., for office rent for June, $3,500.
4 Purchased office supplies from Office Supplies Ltd., cheque #602 for $1,240.
6 Sold five vintage model airplanes to Mr. F. Scott on account, Invoice #17002 for $2,500 each.
7 Sold one vintage model airplane as a cash sale, $2,000.
8 Received cash from Cooper Co., for Invoice #17001 for $7,920. Cooper was entitled to an early payment discount of $80 because they paid their account within 10 days of being billed.
9 Paid salary for one employee, cheque #603 for $1,400.
10 Received an invoice from the Daily Gazette for advertising, payable in 30 days; $1,200.
10 Paid 20% of the June 1 equipment purchase; cheque #604.
11 Received a cheque for $5,000 from Fort Robbins Bridge Builders Ltd., for consulting work that will begin July 1;
14 Borrowed $10,000 from the bank as a loan.
18 Issued a receipt for $5,000 for cash payment from F. Scott as a partial payment of their account.
22 Issued 500 additional shares to owner and shareholder for $5,000 cash.
23 Paid utilities bill from last month to HTC Power Corp., cheque #605 for $350.
25 Billed $35,000 of consulting services rendered to Boyzee Villages Corp. Invoice #17003.
28 Paid Daily Gazette amount owing early and received a discount of $12, reducing payment to $1,188, cheque #606.
29 Paid $200 in dividends to Bill Sloan, owner and sole shareholder, cheque #607.
30 Paid $1,000 to pay the interest owing to date of $30 (interest expense) and reduce the bank loan for the balance, cheque #608.
30 Paid salary for employee up to date, cheque #609 for $1,600.
30 Corrected an error in the payment to the bank. Interest expense should be $35 and $965 to reduce the bank loan.

**Required:**

1. Prepare a sales journal, purchases journal, cash receipts journal, cash disbursements journal, and general journal as shown below. Record the June transactions into these journals. (Ignore GST and account codes for simplicity.)

**Credit Sales Journal** S1

| Date | Billing # | Customer | Ref | Accounts Receivable | Consulting Services Revenue | Vintage Model Plane Sales | Other | Desc |
|---|---|---|---|---|---|---|---|---|
| | | | | Debit | Credit | Credit | | |
| | | | | | | | | |
| Totals | | | | | | | | |

**Credit Purchases Journal** P1

| Date | Invoice # | Creditor | Ref | Accounts Payable | Equipment Purchases | Advertising Expense | Other Purchases | Desc |
|---|---|---|---|---|---|---|---|---|
| | | | | Credit | Debit | Debit | Debit | |
| | | | | | | | | |
| Totals | | | | | | | | |

**Cash Receipts Journal** CR1

| Date | Billing # | Customer | Ref | Cash | Sales Discount | Accounts Receivable | Cash Sales | Other | Desc |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Debit | Debit | Credit | Credit | Credit | |
| | | | | | | | | | |
| Totals | | | | | | | | | |

| Cash Disbursements Journal | | | | | | | | CD1 |
|---|---|---|---|---|---|---|---|---|
| **Date** | **Chq #** | **Payee** | **Ref** | **Cash** | **Purchase Discount** | **Accounts Payable** | **Other Disbursements** | **Desc** |
| | | | | Credit | Credit | Debit | Debit | |
| | | | | | | | | |
| Totals | | | | | | | | |

| General Journal | | | | GJ1 |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | | | | |
| Totals | | | | |

2. Prepare an accounts receivable subledger, accounts payable subledger, and a general ledger as shown below. Post the journals from part 1 to the subledgers and general ledger as shown in Section 2.4 of this chapter. You will need to create multiple Accounts Receivable and Accounts Payable subledgers, as well as general ledgers.

| **Accounts Receivable Subledger** | | | | |
|---|---|---|---|---|
| Name: | | | | |
| Date | Ref | Debit | Credit | Balance |
| | | | | |

| **Accounts Payable Subledger** | | | | |
|---|---|---|---|---|
| Name: | | | | |
| Date | Ref | Debit | Credit | Balance |
| | | | | |

| **General Ledger** | | | | |
|---|---|---|---|---|
| Name: | | | | |
| Date | Ref | Debit | Credit | Balance |
| | | | | |

3. Prepare a trial balance from the general ledger accounts. Use the format shown in Section 2.3 of this chapter. Ensure that the trial balance debits equal the credits and that the

subledgers balance to their respective accounts receivable and accounts payable control accounts.

4. Prepare an income statement, statement of changes in equity and a balance sheet as at June 30, 20XX. Use the format shown in Section 2.3 of this chapter.

# Chapter 3

# Financial Accounting and Adjusting Entries

Chapters 1 and 2 described the recording and reporting of economic transactions in detail. However, the account balances used to prepare the financial statements in these previous chapters did not necessarily reflect correct amounts. Chapter 3 introduces the concept of adjusting entries and how these satisfy the matching principle, ensuring revenues and expenses are reported in the correct accounting period. The preparation of an adjusted trial balance is discussed, as well as its use in completing financial statements. At the end of the accounting period, after financial statements have been prepared, it is necessary to close temporary accounts to retained earnings. This process is introduced in this chapter, as is the preparation of a post-closing trial balance. The accounting cycle, the steps performed each accounting period that result in financial statements, is also reviewed.

## Chapter 3 Learning Objectives

LO1 – Explain how the timeliness, matching, and recognition GAAP require the recording of adjusting entries.

LO2 – Explain the use of and prepare the adjusting entries required for prepaid expenses, depreciation, unearned revenues, accrued revenues, and accrued expenses.

LO3 – Prepare an adjusted trial balance and explain its use.

LO4 – Use an adjusted trial balance to prepare financial statements.

LO5 – Identify and explain the steps in the accounting cycle.

LO6 – Explain the use of and prepare closing entries and a post-closing trial balance.

## Concept Self-Check

Use the following as a self-check while working through Chapter 3.

1. What is the GAAP principle of timeliness?
2. What is the GAAP principle of matching?

3. What is the GAAP principle of revenue recognition?
4. What are adjusting entries and when are they journalized?
5. What are the five types of adjustments?
6. Why is an adjusted trial balance prepared?
7. How is the unadjusted trial balance different from the adjusted trial balance?
8. What are the four closing entries and why are they journalized?
9. Why is the Dividends account not closed to the income summary?
10. When is a post-closing trial balance prepared?
11. How is a post-closing trial balance different from an adjusted trial balance?

**NOTE:** The purpose of these questions is to prepare you for the concepts introduced in the chapter. Your goal should be to answer each of these questions as you read through the chapter. If, when you complete the chapter, you are unable to answer one or more the Concept Self-Check questions, go back through the content to find the answer(s). Solutions are not provided to these questions.

## 3.1 The Operating Cycle

LO1 – Explain how the timeliness, matching, and recognition GAAP require the recording of adjusting entries.

Financial transactions occur continuously during an accounting period as part of a sequence of operating activities. For Big Dog Carworks Corp., this sequence of operating activities takes the following form:

1. Operations begin with some cash on hand.
2. Cash is used to purchase supplies and to pay expenses.
3. Revenue is earned as repair services are completed for customers.
4. Cash is collected from customers.

This cash-to-cash sequence of transactions is commonly referred to as an **operating cycle** and is illustrated in Figure 3.1.

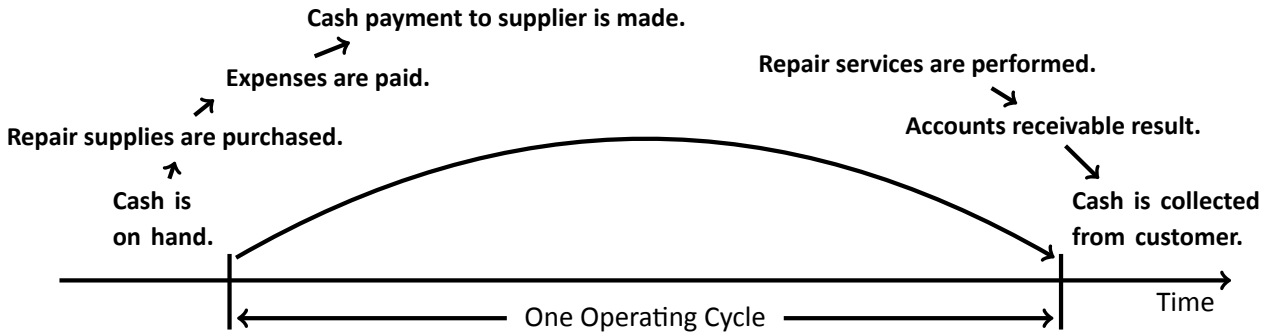



**Figure 3.1: One Operating Cycle**

Depending on the type of business, an operating cycle can vary in duration from short, such as one week (e.g., a grocery store) to much longer, such as one year (e.g., a car dealership). Therefore, an annual accounting period could involve multiple operating cycles as shown in Figure 3.2.

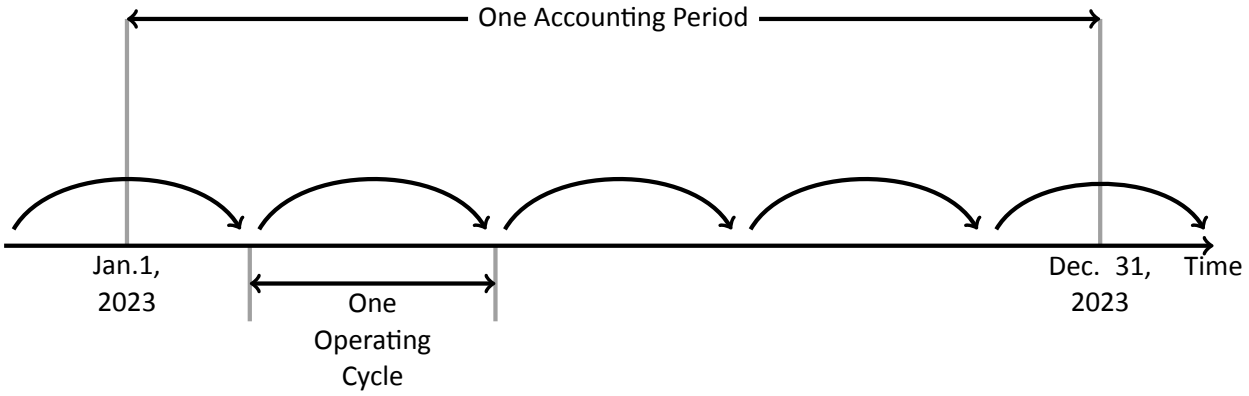



**Figure 3.2: Operating Cycles Within an Annual Accounting Period**

Notice that not all of the operating cycles in Figure 3.2 are completed within the accounting period. Since financial statements are prepared at specific time intervals to meet the GAAP requirement of timeliness, it is necessary to consider how to record and report transactions related to the accounting period's incomplete operating cycles. Two GAAP requirements — recognition and matching — provide guidance in this area, and are the topic of the next sections.

## Recognition Principle in More Detail

GAAP provide guidance about when an economic activity should be recognized in financial statements. An economic activity is recognized when it meets two criteria:

1. it is probable that any future economic benefit associated with the item will flow to the business; and
2. it has a value that can be measured with reliability.

## Revenue Recognition Illustrated

**Revenue recognition** is the process of recording revenue in the accounting period in which it was earned; this is not necessarily when cash is received. Most corporations assume that revenue has been earned at an objectively-determined point in the accounting cycle. For instance, it is often convenient to recognize revenue at the point when a sales invoice has been sent to a customer and the related goods have been received or services performed. This point can occur before receipt of cash from a customer, creating an asset called *Accounts Receivable* and resulting in the following entry:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Accounts Receivable . . . . . | | XX | |
| | Revenue . . . . . | | | XX |
| | To record revenue earned on account. | | | |

When cash payment is later received, the asset *Accounts Receivable* is exchanged for the asset *Cash* and the following entry is made:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Cash . . . . . | | XX | |
| | Accounts Receivable . . . . . | | | XX |
| | To record cash received from credit customer. | | | |

Revenue is recognized in the first entry (the credit to revenue), prior to the receipt of cash. The second entry has no effect on revenue.

When cash is received at the same time that revenue is recognized, the following entry is made:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Cash . . . . . | | XX | |
| | Revenue . . . . . | | | XX |
| | To record cash received from customer. | | | |

When a cash deposit or advance payment is obtained ***before*** revenue is earned, a liability called Unearned Revenue is recorded as follows:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Cash . . . . . | | XX | |
| | Unearned Revenue . . . . . | | | XX |
| | To record cash received from customer for work to be done in the future. | | | |

Revenue is ***not*** recognized until the services have been performed. At that time, the following entry is made:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Unearned Revenue . . . . . | | XX | |
| | Revenue . . . . . | | | XX |
| | To record the earned portion of Unearned Revenue. | | | |

The preceding entry reduces the unearned revenue account by the amount of revenue earned.

The matching of revenue to a particular time period, regardless of when cash is received, is an example of *accrual accounting*. **Accrual accounting** is the process of recognizing revenues when earned and expenses when incurred regardless of when cash is exchanged; it forms the basis of GAAP. Recognition of expenses is discussed in the next section.

## Expense Recognition Illustrated

In a business, costs are incurred continuously. To review, a cost is recorded as an *asset* if it will be incurred in producing revenue in future accounting periods. A cost is recorded as an *expense* if it will be used or consumed during the current period to earn revenue. This distinction between types of cost outlays is illustrated in Figure 3.3.

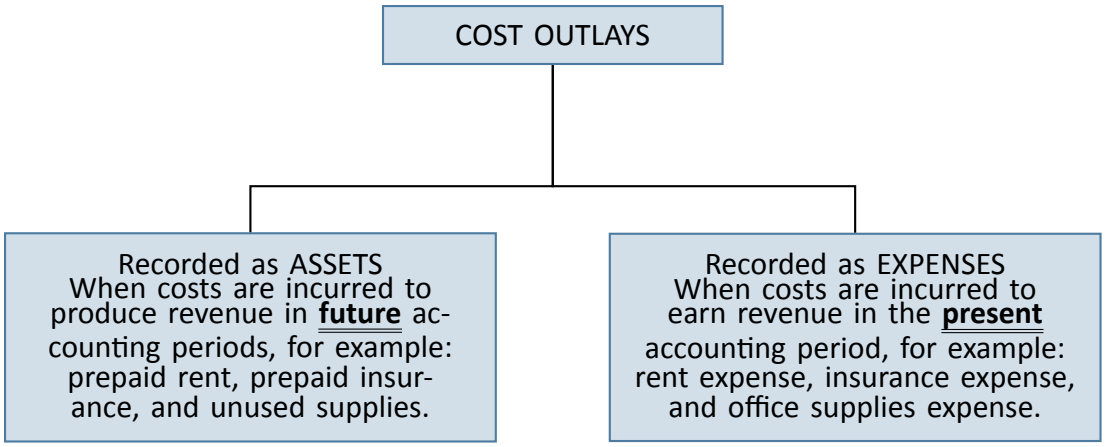



**Figure 3.3: The Interrelationship Between Assets and Expense**

In the previous section regarding revenue recognition, journal entries illustrated three scenarios where *revenue* was recognized before, at the same time as, and after cash was received. Similarly, expenses can be incurred before, at the same time as, or after cash is paid out. An example of when expenses are incurred before cash is paid occurs when the utilities expense for January is not paid until February. In this case, an *account payable* is created in January as follows:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Utilities Expense . . . . . | | XX | |
| | Accounts Payable (or Utilities Payable) | | | XX |
| | To record January utilities expense to be paid in February. | | | |

The utilities expense is reported in the January income statement.

When the January utilities are paid in February, the following is recorded:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Accounts Payable (or Utilities Payable) . . . | | XX | |
| | Cash . . . . . | | | XX |
| | To record payment in February of utilities used in January. | | | |

The preceding entry has no effect on expenses reported on the February income statement.

Expenses can also be recorded at the same time that cash is paid. For example, if salaries for January are paid on January 31, the entry on January 31 is:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Salaries Expense . . . . . | | XX | |
| | Cash . . . . . | | | XX |
| | To record payment of January salaries. | | | |

As a result of this entry, salaries expense is reported on the January income statement when cash is paid.

Finally, a cash payment can be made ***before*** the expense is incurred, such as insurance paid in advance. A prepayment of insurance creates an asset *Prepaid Insurance* and is recorded as:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Prepaid Insurance . . . . . | | XX | |
| | Cash . . . . . | | | XX |
| | To record payment of insurance in advance. | | | |

As the prepaid insurance is used, it is appropriate to report an expense on the income statement by recording the following entry:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Insurance Expense . . . . . | | XX | |
| | Prepaid Insurance . . . . . | | | XX |
| | To record the use of Prepaid Insurance. | | | |

The preceding examples illustrate how to *match* expenses to the appropriate accounting period. The **matching principle** requires that expenses be reported in the same period as the revenues they helped generate. That is, expenses are reported on the income statement: a) when related revenue is recognized, or b) during the appropriate time period, regardless of when cash is paid.

To ensure the recognition and matching of revenues and expenses to the correct accounting period, account balances must be reviewed and adjusted prior to the preparation of financial statements. This is the topic of the next section.

## 3.2 Adjusting Entries

LO2 – Explain the use of and prepare the adjusting entries required for prepaid expenses, depreciation, unearned revenues, accrued revenues, and accrued expenses.

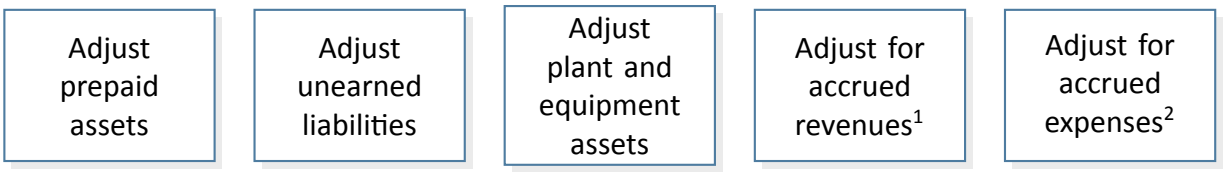
At the end of an accounting period, before financial statements can be prepared, the accounts must be reviewed for potential adjustments. This review is done by using the *unadjusted trial balance*. The **unadjusted trial balance** is a trial balance where the accounts have not yet been adjusted. The trial balance of Big Dog Carworks Corp. at January 31 was prepared in Chapter 2 and appears in Figure 3.4 below. It is an unadjusted trial balance because the accounts have not yet been updated for adjustments. We will use this trial balance to illustrate how adjustments are identified and recorded.

Big Dog Carworks Corp.
Unadjusted Trial Balance
At January 31, 2023

| *Acct.* | *Account* | *Debit* | *Credit* |
|---|---|---|---|
| 101 | Cash | $3,700 | |
| 110 | Accounts receivable | 2,000 | |
| 161 | Prepaid insurance | 2,400 | |
| 183 | Equipment | 3,000 | |
| 184 | Truck | 8,000 | |
| 201 | Bank loan | | $6,000 |
| 210 | Accounts payable | | 700 |
| 247 | Unearned revenue | | 400 |
| 320 | Share capital | | 10,000 |
| 330 | Dividends | 200 | |
| 450 | Repair revenue | | 10,000 |
| 654 | Rent expense | 1,600 | |
| 656 | Salaries expense | 3,500 | |
| 668 | Supplies expense | 2,000 | |
| 670 | Truck operation expense | 700 | |
| | | $27,100 | $27,100 |

**Figure 3.4: Unadjusted Trial Balance of Big Dog Carworks Corp. at January 31, 2023**

Adjustments are recorded with *adjusting entries*. The purpose of **adjusting entries** is to ensure both the balance sheet and the income statement faithfully represent the account balances for the accounting period. Adjusting entries help satisfy the matching principle. There are five types of adjusting entries as shown in Figure 3.5, each of which will be discussed in the following sections.




1. An **accrued revenue** is a revenue that has been earned but has not been collected or recorded.
2. An **accrued expense** is an expense that has been incurred but has not yet been paid or recorded.

**Figure 3.5: Five Types of Adjusting Entries**

## Adjusting Prepaid Asset Accounts

An asset or liability account requiring adjustment at the end of an accounting period is referred to as a **mixed account** because it includes both a balance sheet portion and an income statement portion. The income statement portion must be removed from the account by an adjusting entry.

Refer to Figure 3.4 which shows an unadjusted balance in prepaid insurance of $2,400. Recall from Chapter 2 that Big Dog paid for a 12-month insurance policy that went into effect on January 1 (transaction 5).

The unadjusted trial balance shows the following balance in the Prepaid Insurance account:

| Prepaid Insurance | |
|---|---|
| 2,400 | |

The balance resulted when the journal entry below was recorded:

| | | | |
|---|---|---|---|
| Prepaid Insurance | | 2,400 | |
| Cash | | | 2,400 |

At January 31, one month or $200 of the policy has expired (been used up) calculated as $2,400/12 months = $200.

The adjusting entry on January 31 to transfer $200 out of prepaid insurance and into insurance expense is:

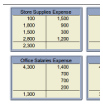
| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jan 31 | Insurance Expense . . . . . | | 200 | |
| | Prepaid Insurance . . . . . | | | 200 |
| | To adjust for the use of one month of Prepaid Insurance. | | | |

As shown below, the balance remaining in the Prepaid Insurance account is $2,200 after the adjusting entry is posted. The $2,200 balance represents the unexpired asset that will benefit future periods, namely, the 11 months from February to December, 2023. The $200 transferred out of prepaid insurance is posted as a debit to the Insurance Expense account to show how much insurance has been used during January.

An expense account, Insurance Expense, is increased by the amount used.

An asset account, Prepaid Insurance, is decreased by the $200 of insurance coverage that was used during January.

If the adjustment was not recorded, assets on the balance sheet would be overstated by $200 and expenses would be understated by the same amount on the income statement.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Prepaid Expenses.

## Adjusting Unearned Liability Accounts

On January 15, Big Dog received a $400 cash payment in advance of services being performed.

The unadjusted trial balance shows the following in the Unearned Repair Revenue account:

| Unearned Repair Revenue | |
|---|---|
| | 400 |

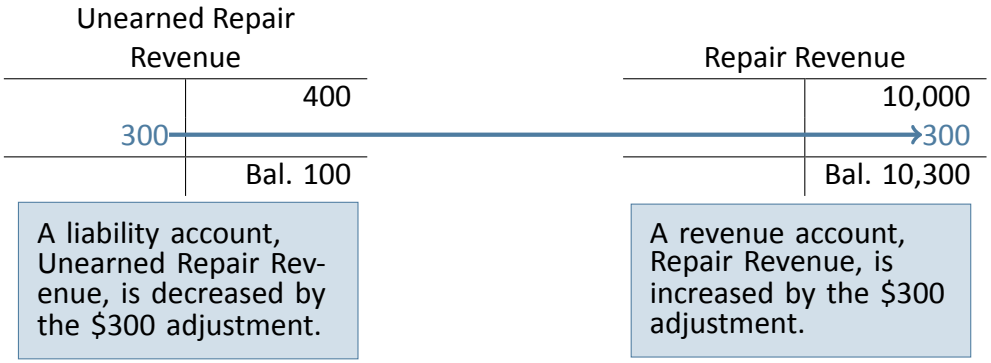
The receipt of the $400 advance payment was recorded as follows:

| | | |
|---|---|---|
| Cash | 400 | |
| Unearned Repair Rev. | | 400 |

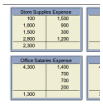
This advance payment was originally recorded as unearned, since the cash was received ***before*** repair services were performed. At January 31, $300 of the $400 unearned amount has been earned. Therefore, $300 must be transferred from unearned repair revenue into repair revenue. The adjusting entry at January 31 is:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jan 31 | Unearned Repair Revenue . . . . . | | 300 | |
| | Repair Revenue . . . . . | | | 300 |
| | To adjust for repair revenue earned. | | | |

After posting the adjustment, the $100 remaining balance in unearned repair revenue ($400 – $300) represents the amount at the end of January that will be earned in the future.




If the adjustment was not recorded, unearned repair revenue would be overstated (too high) by $300 causing liabilities on the balance sheet to be overstated. Additionally, revenue would be understated (too low) by $300 on the income statement if the adjustment was not recorded.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Unearned Revenues.

## Adjusting Plant and Equipment Accounts

Plant and equipment assets, also known as long-lived assets, are expected to help generate revenues over the current and future accounting periods because they are used to produce goods, supply services, or used for administrative purposes. The truck and equipment purchased by Big Dog Carworks Corp. in January are examples of plant and equipment assets that provide economic benefits for more than one accounting period. Because plant and equipment assets are useful for more than one accounting period, their cost must be spread over the time they are used. This is done to satisfy the matching principle. For example, the $100,000 cost of a machine expected to be used over five years is not expensed entirely in the year of purchase because this would cause expenses to be overstated in Year 1 and understated in Years 2, 3, 4, and 5. Therefore, the $100,000 cost must be spread over the asset's five-year life.

The process of allocating the cost of a plant and equipment asset over the period of time it is expected to be used is called **depreciation**. The amount of depreciation is calculated using the actual cost and an estimate of the asset's *useful life* and *residual value*. The **useful life** of a plant

and equipment asset is an estimate of how long it will actually be used by the business regardless of how long the asset is expected to last. For example, a car might have a manufacturer's suggested life of 10 years but a business may have a policy of keeping cars for only 2 years. The useful life for depreciation purposes would therefore be 2 years and not 10 years. The **residual value** is an estimate of what the plant and equipment asset will be sold for when it is no longer used by a business. Residual value can be zero. There are different formulas for calculating depreciation. We will use the **straight-line method of depreciation**:

$$\frac{\text{Cost} - \text{Estimated Residual Value}}{\text{Estimated Useful Life}}$$

The cost less estimated residual value is the total **depreciable cost** of the asset. The straight-line method allocates the depreciable cost equally over the asset's estimated useful life. When recording depreciation expense, our initial instinct is to debit depreciation expense and credit the Plant and Equipment asset account in the same way prepaids were adjusted with a debit to an expense and a credit to the Prepaid asset account. However, crediting the Plant and Equipment asset account is incorrect. Instead, a *contra account* called *accumulated depreciation* must be credited. A **contra account** is an account that is related to another account and typically has an opposite normal balance that is subtracted from the balance of its related account on the financial statements. **Accumulated depreciation** records the amount of the asset's cost that has been expensed since it was put into use. Accumulated depreciation has a normal credit balance that is subtracted from a Plant and Equipment asset account on the balance sheet.

Initially, the concept of crediting Accumulated Depreciation may be confusing because of how we learned to adjust prepaids (debit an expense and credit the prepaid). Remember that prepaids actually get used up and disappear over time. The Plant and Equipment asset account is not credited because, unlike a prepaid, a truck or building does not get used up and disappear. The goal in recording depreciation is to match the cost of the asset to the revenues it helped generate. For example, a $50,000 truck that is expected to be used by a business for 4 years will have its cost spread over 4 years. After 4 years, the asset will likely be sold (journal entries related to the sale of plant and equipment assets are discussed in Chapter 8).

The adjusting journal entry to record depreciation is:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Depreciation Expense . . . . . | | XX | |
| | Accumulated Depreciation . . . . . | | | XX |
| | To adjust for depreciation. | | | |

Subtracting the accumulated depreciation account balance from the Plant and Equipment asset account balance equals the **carrying amount** or **net book value** of the plant and equipment asset that is reported on the balance sheet.

Let's work through two examples to demonstrate depreciation adjustments. Big Dog Carworks Corp.'s January 31, 2023 unadjusted trial balance showed the following two plant and equipment assets:

Big Dog Carworks Corp.
Unadjusted Trial Balance
At January 31, 2023

| *Acct.* | *Account* | *Debit* | *Credit* |
|---|---|---|---|
| 183 | Equipment | 3,000 | |
| 184 | Truck | 8,000 | |

The equipment was purchased for $3,000.

The Equipment general ledger account appears as follows:

| Equipment | |
|---|---|
| 3,000 | |

The balance resulted when this journal entry was recorded:

| | | | |
|---|---|---|---|
| Equipment | | 3,000 | |
| Cash | | | 3,000 |

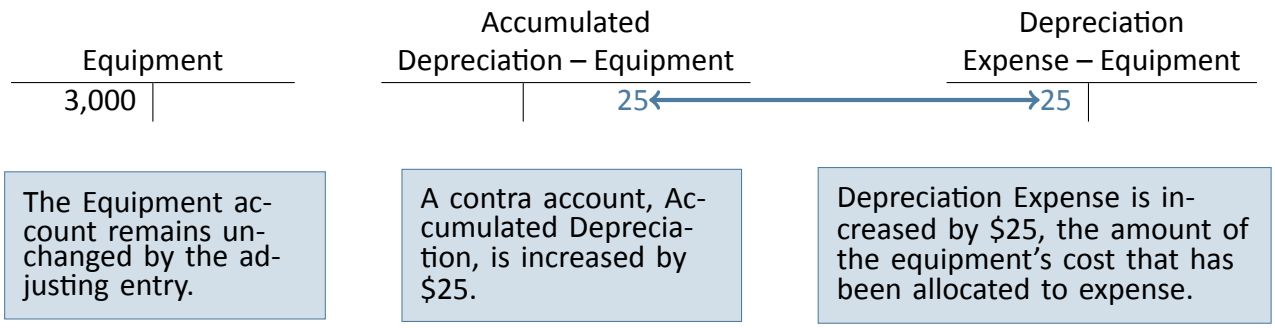
The equipment was recorded as a plant and equipment asset because it has an estimated useful life greater than 1 year. Assume its actual useful life is 10 years (120 months) and the equipment is estimated to be worth $0 at the end of its useful life (residual value of $0).

$$\frac{\text{Cost} - \text{Estimated Residual Value}}{\text{Estimated Useful Life}} = \frac{\$3{,}000 - \$0}{120 \text{ months}} = \$25/\text{month}$$

***Note that depreciation is always rounded to the nearest whole dollar.*** This is because depreciation is based on estimates — an estimated residual value and an estimated useful life; it is not exact. The following adjusting journal entry is made on January 31:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jan 31 | Depreciation Expense, Equipment . . . . . | | 25 | |
| | Accumulated Depreciation, Equipment | | | 25 |
| | To adjust for one month of depreciation on the equipment. | | | |

When the adjusting entry is posted, the accounts appear as follows:




For financial statement reporting, the asset and contra asset accounts are combined. The net book value of the equipment on the balance sheet is shown as $2,975 ($3,000 – $25).

BDCC also shows a truck for $8,000 on the January 31, 2023 unadjusted trial balance.

The Truck general ledger accounts appears as:

| Truck | |
|---|---|
| 8,000 | |

The journal entry to record the purchase of the truck was:

| | | | |
|---|---|---|---|
| Truck | | 8,000 | |
| | Bank Loan | | 5,000 |
| | Cash | | 3,000 |

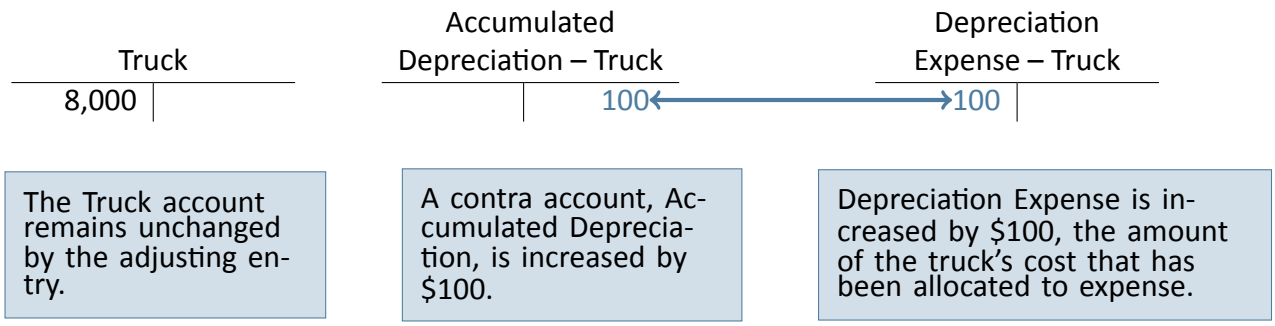
Assume the truck has an estimated useful life of 80 months and a zero estimated residual value. At January 31, one month of the truck cost has expired since it was put into operation in January. Using the straight-line method, depreciation is calculated as:

$$\frac{\text{Cost} - \text{Estimated Residual Value}}{\text{Estimated Useful Life}} = \frac{\$8{,}000 - \$0}{80 \text{ months}} = \$100/\text{month}$$

The adjusting entry recorded on January 31 is:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jan 31 | Depreciation Expense, Truck . . . . . | | 100 | |
| | Accumulated Depreciation, Truck. . . . . | | | 100 |
| | To adjust for one month of depreciation on the truck. | | | |

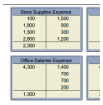
When the adjusting entry is posted, the accounts appear as follows:




For financial statement reporting, the asset and contra asset accounts are combined. The net book value of the truck on the balance sheet is shown as $7,900 ($8,000 – $100).

If depreciation adjustments are not recorded, assets on the balance sheet would be overstated. Additionally, expenses would be understated on the income statement causing net income to be overstated. If net income is overstated, retained earnings on the balance sheet would also be overstated.

It is important to note that land is a long-lived asset. However, it is ***not depreciated*** because it does not get used up over time. Therefore, land is often referred to as a non-depreciable asset.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Depreciation.

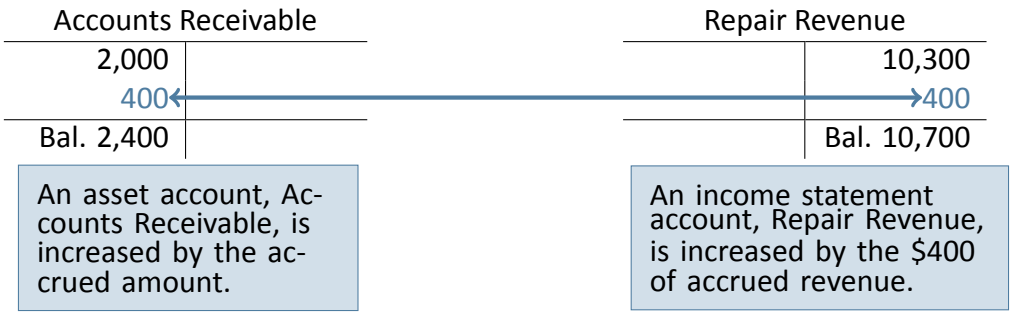
## Adjusting for Accrued Revenues

**Accrued revenues** are revenues that have been earned but not yet collected or recorded. For example, a bank has numerous notes receivable. Interest is earned on the notes receivable as time passes. At the end of an accounting period, there would be notes receivable where the interest has been earned but not collected or recorded. The adjusting entry for accrued revenues is:

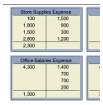
| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Receivable . . . . . | | XXX | |
| | Revenue . . . . . | | | XXX |
| | To adjust for accrued revenue. | | | |

For Big Dog Carworks Corp., assume that on January 31, $400 of repair work was completed for a client but it had not yet been collected or recorded. BDCC must record the following adjusting entry:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jan 31 | Accounts Receivable . . . . . | | 400 | |
| | Repair Revenue . . . . . | | | 400 |
| | To adjust for accrued revenue. | | | |




If the adjustment was not recorded, assets on the balance sheet would be understated by $400 and revenues would be understated by the same amount on the income statement.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Accrued Revenues.

## Adjusting for Accrued Expenses

**Accrued expenses** are expenses that have been incurred but not yet paid or recorded. For example, a utility bill received at the end of the accounting period is likely not payable for 2–3 weeks. Utilities for the period have been used but have not yet been paid or recorded. The adjusting entry for accrued expenses is:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Expense . . . . . | | XXX | |
| | Payable . . . . . | | | XXX |
| | To adjust for accrued expense. | | | |

## Accruing Interest Expense

For Big Dog Carworks Corp., the January 31, 2023 unadjusted trial balance shows a $6,000 bank loan balance. Assume it is a 4%, 60-day bank loan[1]. It was dated January 3 which means that on

[1]The maturity date is March 4, 2023 calculated as: January 31 less January 3 = 28 days + 28 days in February = 56 days + 4 days = March 4.

January 31, 28 days of interest have accrued (January 31 less January 3 = 28 days) as shown in Figure 3.6.

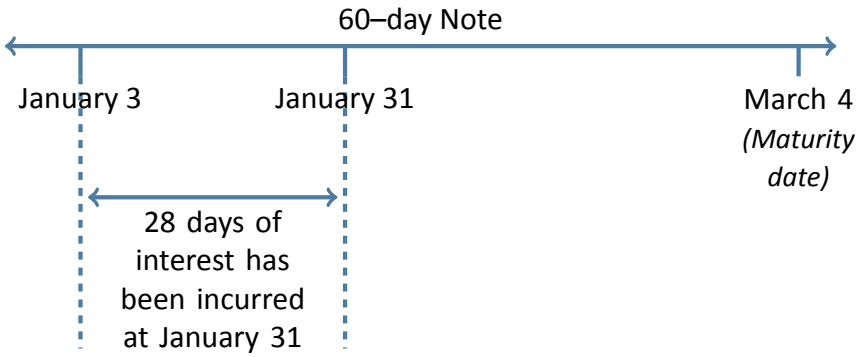



**Figure 3.6: Interest Incurred During an Accounting Period**

The formula for calculating interest when the term is expressed in days is:

$$\text{Interest} = \text{Principal} \times \text{Interest rate} \times \frac{\text{Elapsed time in days}}{365}$$

The interest expense accrued at January 31 is calculated as:

$$\text{Interest} = \$6{,}000 \times 0.04 \times \frac{28}{365} = \$18 \text{ (rounded to nearest whole dollar)}$$

Interest is normally expressed as an annual rate. Therefore, the 28 days must be divided by the 365 days in a year. Normally all interest calculations in this textbook are rounded to two decimal places. However, for simplicity of demonstrations in this chapter, we will round to the nearest whole dollar.

BDCC's adjusting entry on January 31 is:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jan 31 | Interest Expense ..... | | 18 | |
| | Interest Payable ..... | | | 18 |
| | To adjust for accrued interest; $6,000 X 4% X 28/365 = $18.41 (rounded to $18 for illustrative purposes in this chapter). | | | |

This adjusting entry enables BDCC to include the interest expense on the January income statement even though the payment has not yet been made. The entry creates a payable that will be reported as a liability on the balance sheet at January 31.

When the adjusting entry is posted, the accounts appear as:

On February 28, interest will again be accrued and recorded as:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Feb 28 | Interest Expense . . . . . | | 18 | |
| | Interest Payable . . . . . | | | 18 |
| | To adjust for accrued interest; $6,000 X 4% X 28/365 = $18.41 (rounded to $18 for illustrative purposes in this chapter). | | | |

On March 4 when the bank loan matures, Big Dog will pay the interest and principal and record the following entry:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Mar 4 | Interest Expense . . . . . | | 3 | |
| | Interest Payable . . . . . | | 36 | |
| | Bank Loan . . . . . | | 6,000 | |
| | Cash . . . . . | | | 6039 |
| | To record payment of the bank loan and interest; interest expense for March is $6,000 X 4% X 4/365 = $2.63 (rounded to $3 for illustrative purposes in this chapter). | | | |

The $36 debit to interest payable will cause the Interest Payable account to go to zero since the liability no longer exists once the cash is paid. Notice that the total interest expense recorded on the bank loan was $39 – $18 expensed in January, $18 expensed in February, and $3 expensed in March. The interest expense was matched to the life of the bank loan.

## Accruing Income Tax Expense

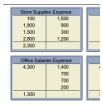
Another adjustment that is required for Big Dog Carworks Corp. involves the recording of corporate income taxes. In most jurisdictions, a corporation is taxed as an entity separate from its

shareholders. For simplicity, assume BDCC's income tax due for January 2023 is $500. The adjusting entry is at January 31:

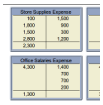
| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jan 31 | Income Tax Expense . . . . . | | 500 | |
| | Income Tax Payable . . . . . | | | 500 |
| | To adjust for January accrued income tax. | | | |

When the adjusting entry is posted, the accounts appear as follows:

The above adjusting entry enables the company to match the income tax expense accrued in January to the income earned during the same month.

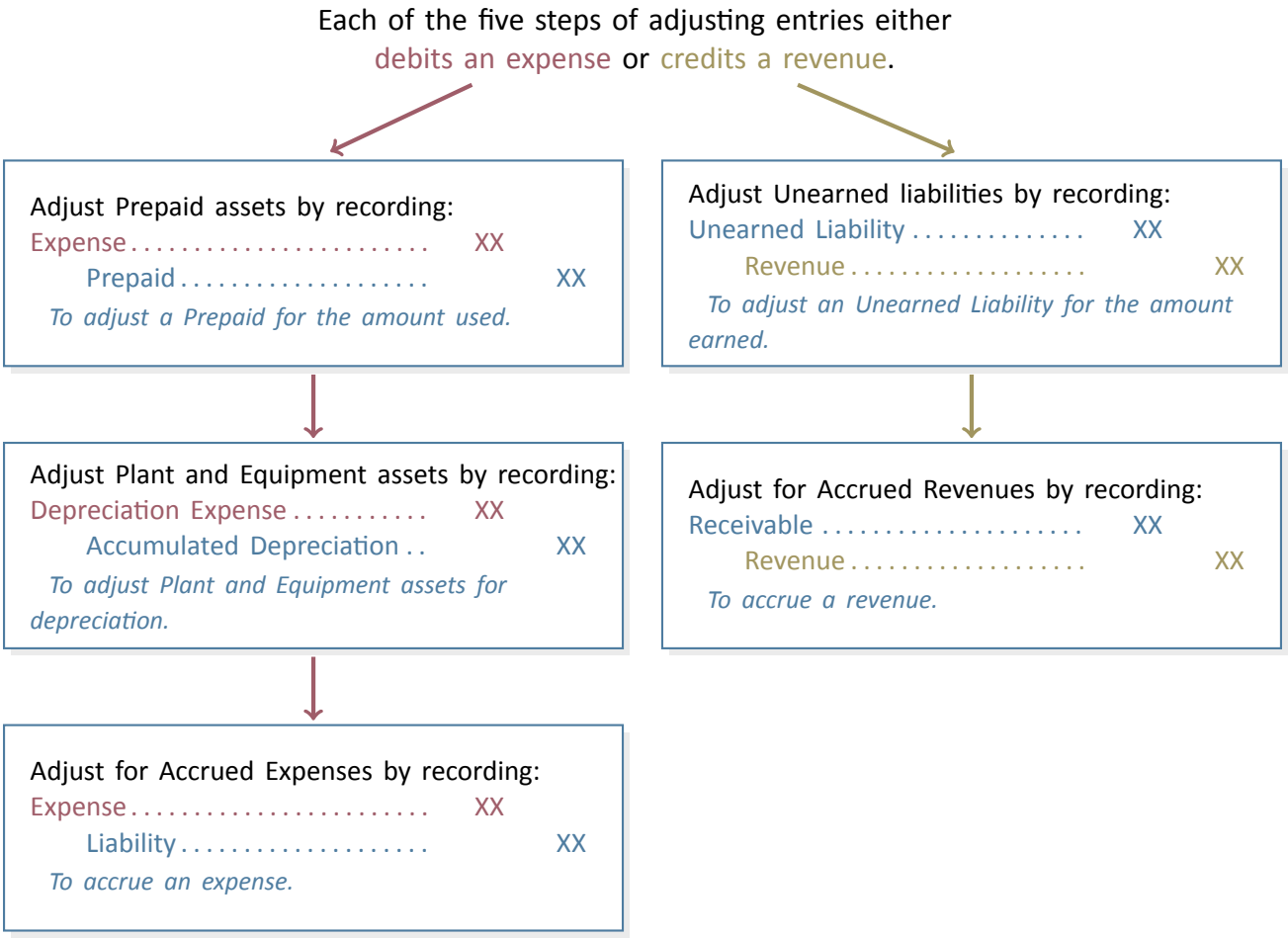


An exploration is available on the Lyryx site. Log into your Lyryx course to run Accrued Expenses.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Collection/Payment of Accrual Adjustments in the Next Accounting Period.

The five types of adjustments discussed in the previous paragraphs are summarized in Figure 3.7.




1. An **accrued revenue** is a revenue that has been earned but has not yet been collected or recorded.
2. An **accrued expense** is an expense that has been incurred but has not yet been paid or recorded.

**Figure 3.7: Summary of the Five Types of Adjusting Entries**

## 3.3 The Adjusted Trial Balance

LO3 – Prepare an adjusted trial balance and explain its use.

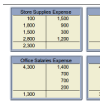
In the last section, adjusting entries were recorded and posted. As a result, some account balances reported on the January 31, 2023 unadjusted trial balance in Figure 2 have changed. Recall that an unadjusted trial balance reports account balances *before* adjusting entries have been recorded and posted. An **adjusted trial balance** reports account balances *after* adjusting entries have been recorded and posted. Figure 3.8 shows the adjusted trial balance for BDCC at January 31, 2023.

In Chapters 1 and 2, the preparation of financial statements was demonstrated using BDCC's *unadjusted* trial balance. We now know that an adjusted trial balance must be used to prepare financial statements.

Big Dog Carworks Corp.
Adjusted Trial Balance
At January 31, 2023

| | *Account Balance* | |
|---|---|---|
| *Account* | *Debit* | *Credit* |
| Cash | $3,700 | |
| Accounts receivable | 2,400 | |
| Prepaid insurance | 2,200 | |
| Equipment | 3,000 | |
| Accumulated depreciation – equipment | | $ 25 |
| Truck | 8,000 | |
| Accumulated depreciation – truck | | 100 |
| Bank loan | | 6,000 |
| Accounts payable | | 700 |
| Interest payable | | 18 |
| Unearned repair revenue | | 100 |
| Income tax payable | | 500 |
| Share capital | | 10,000 |
| Dividends | 200 | |
| Repair revenue | | 10,700 |
| Depreciation expense – equipment | 25 | |
| Depreciation expense – truck | 100 | |
| Rent expense | 1,600 | |
| Insurance expense | 200 | |
| Interest expense | 18 | |
| Salaries expense | 3,500 | |
| Supplies expense | 2,000 | |
| Truck operation expense | 700 | |
| Income tax expense | 500 | |
| Total debits and credits | $28,143 | $28,143 |

**Figure 3.8: BDCC's January 31, 2023 Adjusted Trial Balance**



An exploration is available on the Lyryx site. Log into your Lyryx course to run Adjusted Trial Balance.

## 3.4 Using the Adjusted Trial Balance to Prepare Financial Statements

LO4 – Use an adjusted trial balance to prepare financial statements.

In the last section, we saw that the adjusted trial balance is prepared after journalizing and posting the adjusting entries. This section shows how financial statements are prepared using the adjusted trial balance.

Big Dog Carworks Corp.
Adjusted Trial Balance
January 31, 2023

| *Account* | *Account Balance* *Debit* | *Credit* |
|---|---|---|
| Cash | $ 3,700 | |
| Accounts receivable | 2,400 | |
| Prepaid insurance | 2,200 | |
| Equipment | 3,000 | |
| Accumulated depreciation – equipment | | $ 25 |
| Truck | 8,000 | |
| Accumulated depreciation – truck | | 100 |
| Bank loan | | 6,000 |
| Accounts payable | | 700 |
| Interest payable | | 18 |
| Unearned repair revenue | | 100 |
| Income tax payable | | 500 |
| Share capital | | 10,000 |
| Dividends | 200 | |
| Repair revenue | | 10,700 |
| Depreciation expense – equipment | 25 | |
| Depreciation expense – truck | 100 | |
| Rent expense | 1,600 | |
| Insurance expense | 200 | |
| Interest expense | 18 | |
| Salaries expense | 3,500 | |
| Supplies expense | 2,000 | |
| Truck operation expense | 700 | |
| Income tax expense | 500 | |
| Total debits and credits | $28,143 | $28,143 |

Asset accounts, liability accounts, and the equity accounts from the statement of changes in equity are used to prepare the balance sheet.

Share capital, dividends, and the net income/loss from the income statement are used to prepare the statement of changes in equity.

Revenue and expense accounts are used to prepare the income statement.

**Figure 3.9: BDCC's January 31, 2023 Adjusted Trial Balance and Links Among Financial Statements**

The income statement is prepared first, followed by the statement of changes in equity as shown below.

Big Dog Carworks Corp.
Adjusted Trial Balance
At January 31, 2023

| *Account* | *Debit* | *Credit* |
|---|---|---|
| Cash | $ 3,700 | |
| Accounts receivable | 2,400 | |
| Prepaid insurance | 2,200 | |
| Equipment | 3,000 | |
| Accum. dep. – equipment | | $ 25 |
| Truck | 8,000 | |
| Accum. dep. – truck | | 100 |
| Bank loan | | 6,000 |
| Accounts payable | | 700 |
| Interest payable | | 18 |
| Unearned revenue | | 100 |
| Income tax payable | | 500 |
| Share capital | | 10,000 |
| Dividends | 200 | |
| Repair revenue | | 10,700 |
| Dep. expense – equipment | 25 | |
| Dep. expense – truck | 100 | |
| Rent expense | 1,600 | |
| Insurance expense | 200 | |
| Interest expense | 18 | |
| Salaries expense | 3,500 | |
| Supplies expense | 2,000 | |
| Truck operation expense | 700 | |
| Income tax expense | 500 | |
| | $28,143 | $28,143 |

Big Dog Carworks Corp.
Income Statement
For the Month Ended January 31, 2023

| | | |
|---|---|---|
| Revenues | | |
| Repair revenue | | $10,700 |
| Expenses | | |
| Salaries expense | $ 3,500 | |
| Supplies expense | 2,000 | |
| Rent expense | 1,600 | |
| Truck operation expense | 700 | |
| Income tax expense | 500 | |
| Insurance expense | 200 | |
| Dep. expense – truck | 100 | |
| Dep. expense – equipment | 25 | |
| Interest expense | 18 | |
| Total expenses | | 8,643 |
| Net income | | $2,057 |

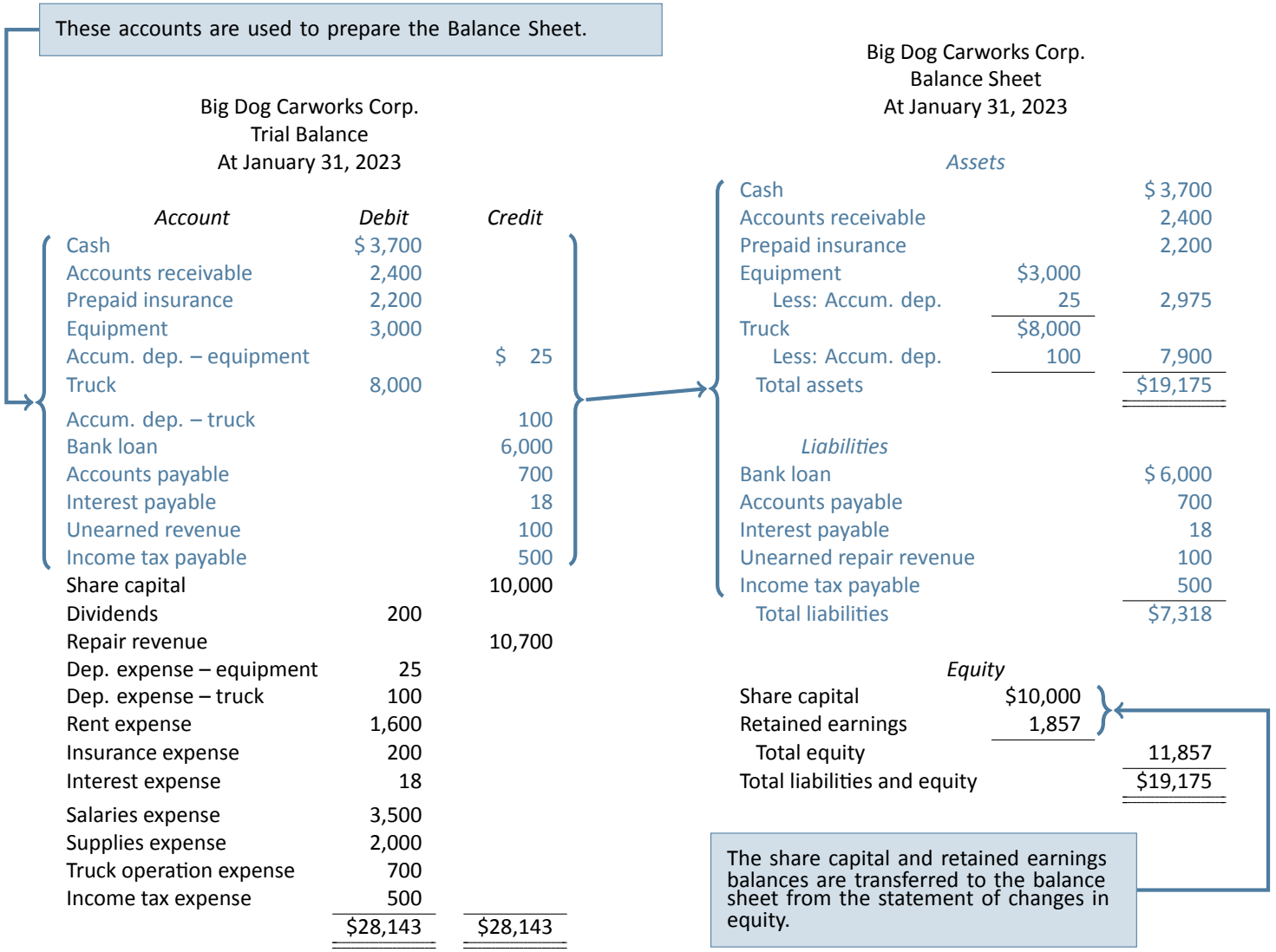
Net income is transferred to the Statement of Changes in Equity as part of retained earnings.

Big Dog Carworks Corp.
Statement of Changes in Equity
For the Month Ended January 31, 2023

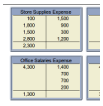
| | *Share capital* | *Retained earnings* | *Total equity* |
|---|---|---|---|
| Balance at beginning of period | $ -0- | $ -0- | $ -0- |
| Shares issued | 10,000 | | 10,000 |
| Dividends | | (200) | (200) |
| Net income | | 2,057 | 2,057 |
| Balance at end of period | $10,000 | $1,857 | $11,857 |

Share capital and dividends are transferred to the Statement of Changes in Equity. Dividends is part of retained earnings because it is a distribution of net income.

The balance sheet can be prepared once the statement of changes in equity is complete.



Notice how accumulated depreciation is shown on the balance sheet.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Adjustments and Financial Statements.

## 3.5 The Accounting Cycle

LO5 – Identify and explain the steps in the accounting cycle.

The concept of the accounting cycle was introduced in Chapter 2. The accounting cycle consists of the steps followed each accounting period to prepare financial statements. These eight steps are:

*Step 1: Transactions are analyzed and recorded in the general journal*

*Step 2: The journal entries in the general journal are posted to accounts in the general ledger*

*Step 3: An unadjusted trial balance is prepared to ensure total debits equal total credits*

*Step 4: The unadjusted account balances are analyzed and adjusting entries are journalized in the general journal and posted to the general ledger*

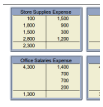
*Step 5: An adjusted trial balance is prepared to prove the equality of debits and credits*

*Step 6: The adjusted trial balance is used to prepare financial statements*

*Step 7: Closing entries are journalized and posted*

*Step 8: Prepare a post-closing trial balance*

Steps 1 through 6 were introduced in this and the preceding chapters. Steps 7 and 8 are discussed in the next section.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Reviewing the Accounting Cycle.

## 3.6 The Closing Process

LO6 – Explain the use of and prepare closing entries and a post-closing trial balance.

At the end of a fiscal year, after financial statements have been prepared, the revenue, expense, and dividend account balances must be zeroed so that they can begin to accumulate amounts belonging to the new fiscal year. To accomplish this, *closing entries* are journalized and posted. **Closing entries** transfer each revenue and expense account balance, as well as any balance in the Dividend account, into retained earnings. Revenues, expenses, and dividends are therefore referred to as **temporary accounts** because their balances are zeroed at the end of each accounting period. Balance sheet accounts, such as retained earnings, are **permanent accounts** because they have a continuing balance from one fiscal year to the next. The closing process transfers temporary account balances into a permanent account, namely retained earnings. The four entries in the closing process are detailed below.

**Entry 1: Close the revenue accounts to the income summary account**

A single compound closing entry is used to transfer revenue account balances to the *income summary account*. The **income summary** is a checkpoint: once all revenue and expense account balances are transferred/closed to the income summary, the balance in the Income Summary account must be equal to the net income/loss reported on the income statement. If not, the revenues and expenses were not closed correctly.

**Entry 2: Close the expense accounts to the Income Summary account**

The expense accounts are closed in one compound closing journal entry to the Income Summary account. All expense accounts with a debit balance are credited to bring them to zero. Their balances are transferred to the Income Summary account as an offsetting debit.

After entries 1 and 2 above are posted to the Income Summary account, the balance in the income summary must be compared to the net income/loss reported on the income statement. If the income summary balance does not match the net income/loss reported on the income statement, the revenues and/or expenses were not closed correctly.

**Entry 3: Close the income summary to retained earnings**

The Income Summary account is closed to the Retained Earnings account. This procedure transfers the balance in the income summary to retained earnings. Again, the amount closed from the income summary to retained earnings must always equal the net income/loss as reported on the income statement.

Note that the Dividend account is **not** closed to the Income Summary account because dividends is not an income statement account. The dividend account is closed in Entry 4.

**Entry 4: Close dividends to retained earnings**

The Dividend account is closed to the Retained Earnings account. This results in transferring the balance in dividends, a temporary account, to retained earnings, a permanent account.

The balance in the Income Summary account is transferred to retained earnings because the net income (or net loss) belongs to the shareholders. The closing entries for Big Dog Carworks Corp. are shown in Figure 3.10.

GENERAL JOURNAL — Page 1

| Date | Description | F | Debit | Credit |
|---|---|---|---|---|
| 2023 | | | | |
| | Closing Entries | | | |
| Jan. 31 | Repair Revenue | | 10700 - | |
| | Income Summary | | | 10700 - |
| | To close the revenue account balance. | | | |
| | Income Summary | | 8643 - | |
| | Depreciation expense – equipment | | | 25 - |
| | Depreciation expense – truck | | | 100 - |
| | Income tax expense | | | 500 - |
| | Insurance expense | | | 200 - |
| | Interest expense | | | 18 - |
| | Rent expense | | | 1600 - |
| | Salaries expense | | | 3500 - |
| | Supplies expense | | | 2000 - |
| | Truck operation expense | | | 700 - |
| | To close expense account balances. | | | |
| | Income Summary | | 2057 - | |
| | Retained earnings | | | 2057 - |
| | To close income summary to retained earnings. | | | |
| | Retained Earnings | | 200 - | |
| | Dividends | | | 200 - |
| | To close dividends to retained earnings. | | | |

**Figure 3.10: Closing Entries**

## Posting the Closing Entries to the General Ledger

When entries 1 and 2 are posted to the general ledger, the balances in all revenue and expense accounts are transferred to the Income Summary account. The transfer of these balances is shown in Figure 3.11. Notice that a zero balance results for each revenue and expense account after the closing entries are posted, and there is a $2,057 credit balance in the income summary. The

income summary balance agrees to the net income reported on the income statement.

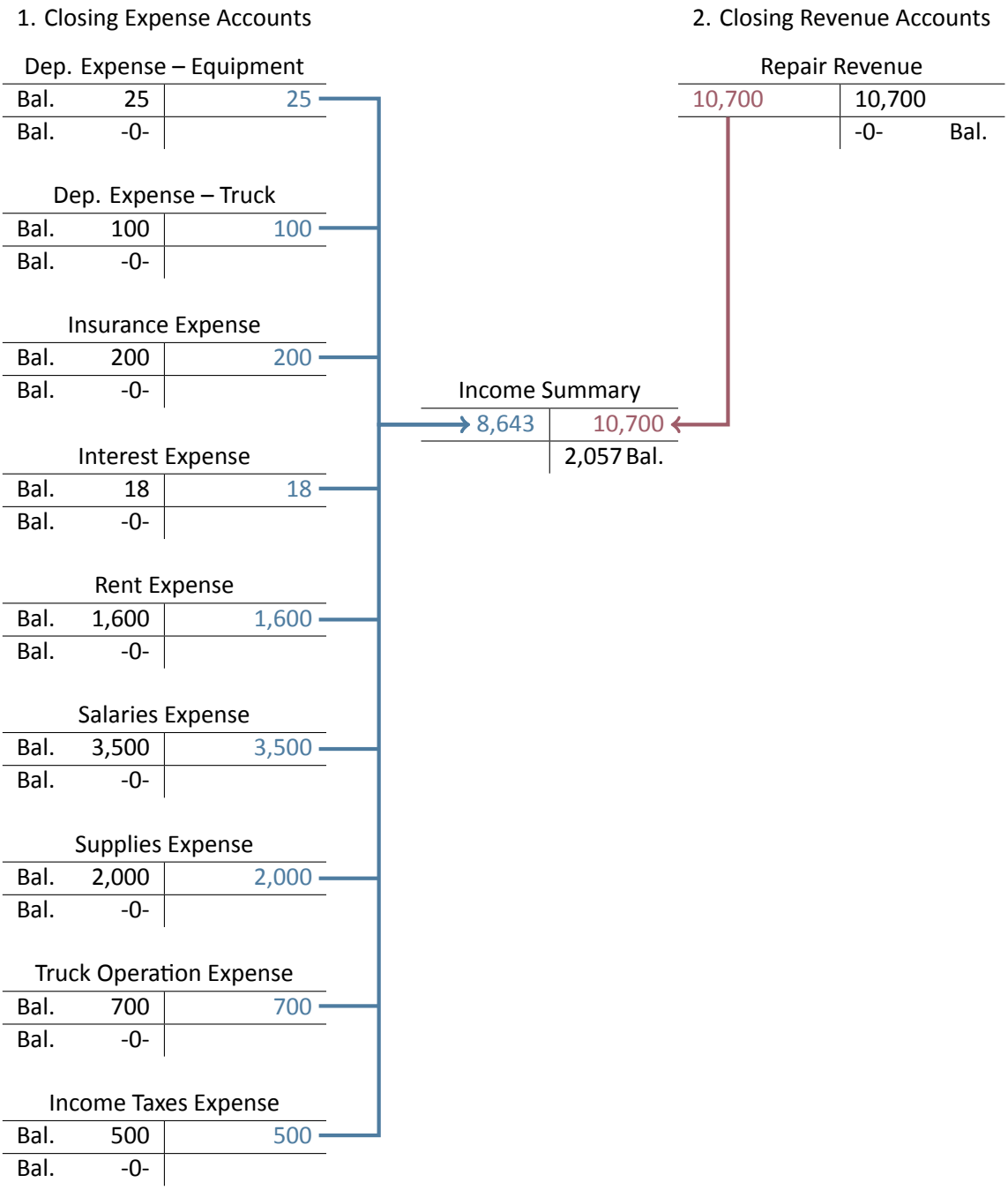



**Figure 3.11: Closing Revenue and Expense Accounts**

When the income summary is closed to retained earnings in the third closing entry, the $2,057 credit balance in the income summary account is transferred into retained earnings as shown in Figure 3.12. As a result, the income summary is left with a zero balance.

3. Closing the Income Summary Account

**Figure 3.12: Closing the Income Summary Account**

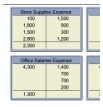
This example demonstrated closing entries when there was a net income. When there is a net loss, the Income Summary account will have a debit balance after revenues and expenses have been closed. To close the Income Summary account when there is a net loss, the following closing entry is required:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Retained Earnings . . . . . | | XX | |
| | Income Summary . . . . . | | | XX |
| | To close the net loss, a debit balance in the income summary, to retained earnings. | | | |

Finally, when dividends is closed to retained earnings in the fourth closing entry, the $200 debit balance in the Dividends account is transferred into retained earnings as shown in Figure 3.13. After the closing entry is posted, the Dividends account is left with a zero balance and retained earnings is left with a credit balance of $1,857. Notice that the $1,857 must agree to the retained earnings balance calculated on the statement of changes in equity.

4. Closing the Dividends Account

**Figure 3.13: Closing the Dividends Account**



An exploration is available on the Lyryx site. Log into your Lyryx course to run Closing Entries.

## The Post–Closing Trial Balance

A **post-closing trial balance** is prepared immediately following the posting of closing entries. The purpose is to ensure that the debits and credits in the general ledger are equal and that all tempo-

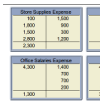
rary accounts have been closed. The post-closing trial balance for Big Dog Carworks Corp. appears below.

Big Dog Carworks Corp.
Post-Closing Trial Balance
January 31, 2023

| *Account* | *Account Balance* *Debit* | *Credit* |
|---|---|---|
| Cash | $ 3,700 | |
| Accounts receivable | 2,400 | |
| Prepaid insurance | 2,200 | |
| Equipment | 3,000 | |
| Accumulated depreciation – equipment | | $ 25 |
| Truck | 8,000 | |
| Accumulated depreciation – truck | | 100 |
| Bank loan | | 6,000 |
| Accounts payable | | 700 |
| Interest payable | | 18 |
| Unearned repair revenue | | 100 |
| Income taxes payable | | 500 |
| Share capital | | 10,000 |
| Retained earnings | | 1,857 |
| Total debits and credits | $19,300 | $19,300 |

Only permanent accounts remain.

Note that only balance sheet accounts, the permanent accounts, have balances and are carried forward to the next accounting year. All temporary accounts begin the new fiscal year with a zero balance, so they can be used to accumulate amounts belonging to the new time period.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Closing Errors.

## Summary of Chapter 3 Learning Objectives

### LO1 – Explain how the timeliness, matching, and recognition GAAP require the recording of adjusting entries.

Financial statements must be prepared in a timely manner, at minimum, once per fiscal year. For statements to reflect activities accurately, revenues and expenses must be recognized and reported in the appropriate accounting period. In order to achieve this type of matching, adjusting entries need to be prepared.

## LO2 – Explain the use of and prepare the adjusting entries required for prepaid expenses, depreciation, unearned revenues, accrued revenues, and accrued expenses.

Adjusting entries are prepared at the end of an accounting period. They allocate revenues and expenses to the appropriate accounting period regardless of when cash was received/paid. The five types of adjustments are:

| | | |
|---|---|---|
| Expense | XX | |
| Prepaid | | XX |
| *To adjust prepaid for the amount used/expired.* | | |

| | | |
|---|---|---|
| Receivable | XX | |
| Revenue | | XX |
| *To adjust for accrued revenue.* | | |

| | | |
|---|---|---|
| Depreciation Expense | XX | |
| Accumulated Depreciation | | XX |
| *To allocate the cost of a plan or equipment asset over its useful life.* | | |

| | | |
|---|---|---|
| Expense | XX | |
| Payable | | XX |
| *To adjust for accrued expense.* | | |

| | | |
|---|---|---|
| Unearned Revenue | XX | |
| Revenue | | XX |
| *To adjust unearned amounts for amount earned.* | | |

## LO3 – Prepare an adjusted trial balance and explain its use.

The adjusted trial balance is prepared using the account balances in the general ledger after adjusting entries have been posted. Debits must equal credits. The adjusted trial balance is used to prepare the financial statements.

## LO4 – Use an adjusted trial balance to prepare financial statements.

Financial statements are prepared based on adjusted account balances.

## LO5 – Identify and explain the steps in the accounting cycle.

The steps in the accounting cycle are followed each accounting period in the recording and reporting of financial transactions. The steps are:

1. Transactions are analyzed and recorded in the general journal.
2. The journal entries in the general journal are posted to accounts in the general ledger.

3. An unadjusted trial balance is prepared to ensure total debits equal total credits.
4. The unadjusted account balances are analyzed, and adjusting entries are journalized in the general journal and posted to the general ledger.
5. An adjusted trial balance is prepared to prove the equality of debits and credits.
6. The adjusted trial balance is used to prepare financial statements.
7. Closing entries are journalized and posted.
8. Prepare a post-closing trial balance.

## LO6 – Explain the use of and prepare closing entries and a post-closing trial balance.

After the financial statements have been prepared, the temporary account balances (revenues, expenses, and dividends) are transferred to retained earnings, a permanent account, via closing entries. The result is that the temporary accounts will have a zero balance and will be ready to accumulate transactions for the next accounting period. The four closing entries are:

| | | | |
|---|---|---|---|
| Revenue | XX | | |
| Income Summary | | XX | |
| *To close each revenue to the income summary.* | | | |

| | | | |
|---|---|---|---|
| Income Summary | XX | | |
| Expense | | XX | |
| *To close each expense to the income summary.* | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Income Summary | XX | | **OR** | Retained Earnings | XX | |
| Retained Earnings | | XX | | Income Summary | | XX |
| *To close a net income in income summary to retained earnings.* | | | | *To close a net loss in income summary to retained earnings.* | | |

| | | |
|---|---|---|
| Retained Earnings | XX | |
| Dividends | | XX |
| *To close dividends to retained earnings.* | | |

The post-closing trial balance is prepared after the closing entries have been posted to the general ledger. The post-closing trial balance will contain only permanent accounts because all the temporary accounts have been closed.

## Discussion Questions

1. Explain the sequence of financial transactions that occur continuously during an accounting time period. What is this sequence of activities called?
2. Do you have to wait until the operating cycle is complete before you can measure income using the accrual basis of accounting?
3. What is the relationship between the matching concept and accrual accounting? Are revenues matched to expenses, or are expenses matched to revenues? Does it matter one way or the other?
4. What is the impact of the going concern concept on accrual accounting?
5. Identify three different categories of expenses.
6. What are adjusting entries and why are they required?
7. Why are asset accounts like Prepaid Insurance adjusted? How are they adjusted?
8. How are plant and equipment asset accounts adjusted? Is the procedure similar to the adjustment of other asset and liability accounts at the end of an accounting period?
9. What is a *contra account* and why is it used?
10. How are liability accounts like Unearned Repair Revenue adjusted?
11. Explain the term *accruals*. Give examples of items that accrue.
12. Why is an adjusted trial balance prepared?
13. How is the adjusted trial balance used to prepare financial statements?
14. List the eight steps in the accounting cycle.
15. Which steps in the accounting cycle occur continuously throughout the accounting period?
16. Which steps in the accounting cycle occur only at the end of the accounting period? Explain how they differ from the other steps.
17. Give examples of revenue, expense, asset, and liability adjustments.
18. In general, income statement accounts accumulate amounts for a time period not exceeding one year. Why is this done?
19. Identify which types of general ledger accounts are temporary and which are permanent.
20. What is the income summary account and what is its purpose?
21. What is a post-closing trial balance and why is it prepared?

## Exercises

---

**EXERCISE 3–1 (LO1,2) Adjusting Entries**

The following are account balances of Graham Corporation:

| *Account Title* | *Amount in Unadjusted Trial Balance* | *Balance after Adjustment* |
|---|---|---|
| Interest Receivable | $ -0- | $110 |
| Prepaid Insurance | 1,800 | 600 |
| Interest Payable | -0- | 90 |
| Salaries Payable | -0- | 450 |
| Unearned Rent | 700 | 200 |

**Required**:

**a.** Enter the unadjusted balance for each account in the following T-accounts: Interest Receivable, Prepaid Insurance, Interest Payable, Salaries Payable, Unearned Rent, Interest Earned, Rent Earned, Insurance Expense, Interest Expense, and Salaries Expense.

**b.** Reconstruct the adjusting entry that must have been recorded for each account.

**c.** Post these adjusting entries and agree ending balances in each T-account to the adjusted balances above.

**d.** List revenue and expense amounts for the period.

---

**EXERCISE 3–2 (LO1,2) Adjusting Entries**

The trial balance of Lauer Corporation at December 31, 2023 follows, before and after the posting of adjusting entries.

| | *Trial Balance* | | *Adjustments* | | *Adjusted Trial Balance* | |
|---|---|---|---|---|---|---|
| | *Dr.* | *Cr.* | *Dr.* | *Cr.* | *Dr.* | *Cr.* |
| Cash | $4,000 | | | | $4,000 | |
| Accounts Receivable | 5,000 | | | | 5,000 | |
| Prepaid Insurance | 3,600 | | | | 3,300 | |
| Prepaid Rent | 1,000 | | | | 500 | |
| Truck | 6,000 | | | | 6,000 | |
| Accumulated Depreciation | | $ -0- | | | | $1,500 |
| Accounts Payable | | 7,000 | | | | 7,400 |
| Salaries Payable | | | | | | 1,000 |
| Unearned Rent | | 1,200 | | | | 600 |
| Share Capital | | 2,700 | | | | 2,700 |
| Revenue | | 25,000 | | | | 25,000 |
| Rent Earned | | | | | | 600 |
| Advertising Expense | 700 | | | | 700 | |
| Commissions Expense | 2,000 | | | | 2,000 | |
| Depreciation Expense | | | | | 1,500 | |
| Insurance Expense | | | | | 300 | |
| Interest Expense | 100 | | | | 500 | |
| Rent Expense | 5,500 | | | | 6,000 | |
| Salaries Expense | 8,000 | | | | 9,000 | |
| Totals | $35,900 | $35,900 | | | $38,800 | $38,800 |

**Required**:

**a.** Indicate in the "Adjustments" column the debit or credit difference between the unadjusted trial balance and the adjusted trial balance.

**b.** Prepare in general journal format the adjusting entries that have been recorded. Include descriptions.

---

**EXERCISE 3–3 (LO1,2) Adjusting Entries**

The following data are taken from an unadjusted trial balance at December 31, 2023:

| | |
|---|---|
| Prepaid Rent | $ 600 |
| Office Supplies | 700 |
| Income Taxes Payable | -0- |
| Unearned Commissions | 1,500 |
| Salaries Expense | 5,000 |

Additional Information:

(a) The prepaid rent consisted of a payment for three months' rent at $200 per month for December 2023, January 2024, and February 2024.

(b) Office supplies on hand at December 31, 2023 amounted to $300.

(c) The estimated income taxes for 2023 are $5,000.

(d) All but $500 in the Unearned Commissions account has been earned in 2023.

(e) Salaries for the last three days of December amounting to $300 have not yet been recorded.

**Required**:

**a.** Prepare all necessary adjusting entries in general journal format.

**b.** Calculate the cumulative financial impact on assets, liabilities, equity, revenue and expense if these adjusting entries are not made.

---

**EXERCISE 3–4 (LO1,2) Adjusting Entries**

The following are general ledger accounts extracted from the records of Bernard Inc. at December 31, 2023, its year-end ('Bal' = unadjusted balance):

| Prepaid Advertising | |
|---|---|
| Bal. 1,000 | 500 |

| Unused Supplies | |
|---|---|
| Bal. 750 | 400 |

| Equipment | |
|---|---|
| Bal. 21,750 | |

| Acc. Dep'n – Equipment | |
|---|---|
| | Bal. 1,500 |
| | 250 |

| Accounts Payable | |
|---|---|
| | Bal. 15,000 |
| | 200 |
| | 100 |
| | 400 |
| | 800 |

| Salaries Payable | |
|---|---|
| | 700 |

| Unearned Subscriptions | |
|---|---|
| 5,000 | Bal. 10,000 |

| Share Capital | |
|---|---|
| | Bal. 8,000 |

| Subscription Revenue | |
|---|---|
| | 5,000 |

| Advertising Expense | |
|---|---|
| 500 | |

| Commissions Expense | |
|---|---|
| 800 | |

| Dep'n Expense – Equipment | |
|---|---|
| 250 | |

| Maintenance Expense | |
|---|---|
| 200 | |

| Salaries Expense | |
|---|---|
| Bal. 9,500 | |
| 700 | |

| Supplies Expense | |
|---|---|
| Bal. 2,500 | |
| 400 | |

| Telephone Expense | |
|---|---|
| 100 | |

| Utilities Expense | |
|---|---|
| 400 | |

**Required**: Prepare in general journal format the adjusting entries that were posted. Include plausible descriptions/narratives for each adjustment.

---

**EXERCISE 3–5 (LO1,2) Adjusting Entries**

The following unadjusted accounts are extracted from the general ledger of A Corp. at December 31, 2023:

| Truck | |
|---|---|
| 10,000 | |

| Depreciation Expense – Truck | |
|---|---|
| 1,300 | |

| Acc. Dep'n – Truck | |
|---|---|
| | 1,300 |

Additional Information: The truck was purchased January 1, 2023. It has an estimated useful life of 4 years.

**Required**: Prepare the needed adjusting entry at December 31, 2023.

---

**EXERCISE 3–6 (LO1,2) Adjusting Entries**

The following unadjusted accounts are taken from the records of B Corp. at December 31, 2023:

| Bank Loan | |
|---|---|
| | 12,000 |

| Interest Expense | |
|---|---|
| 1,100 | |

| Interest Payable | |
|---|---|
| | 100 |

Additional Information: The bank loan was received on January 1, 2023. It bears interest at 10 per cent.

**Required**: Prepare the adjusting entry at December 31, 2023.

---

**EXERCISE 3–7 (LO1,2) Adjusting Entries**

The following general ledger accounts and additional information are taken from the records of Wolfe Corporation at the end of its fiscal year, December 31, 2023.

| Cash *101* | |
|---|---|
| Bal. 2,700 | |

| Unused Supplies *173* | |
|---|---|
| Bal. 700 | |

| Advertising Exp. *610* | |
|---|---|
| Bal. 200 | |

| Accounts Receivable *110* | |
|---|---|
| Bal. 2,000 | |

| Share Capital *320* | |
|---|---|
| | Bal. 3,800 |

| Salaries Expense *656* | |
|---|---|
| Bal. 4,500 | |

| Prepaid Insurance *161* | |
|---|---|
| Bal. 1,200 | |

| Repair Revenue *450* | |
|---|---|
| | Bal. 7,750 |

| Telephone Expense *669* | |
|---|---|
| Bal. 250 | |

Additional Information:

(a) The prepaid insurance is for a one-year policy, effective July 1, 2023.

(b) A physical count indicated that $500 of supplies is still on hand.

(c) A $50 December telephone bill has been received but not yet recorded.

**Required**: Record all necessary adjusting entries in general journal format.

---

**EXERCISE 3–8 (LO2) Adjusting Entries**

Below are descriptions of various monthly adjusting entries:

1. Adjusting entry for revenue earned but not yet billed to the customer.
2. Adjusting entry for cash received from a customer for revenue not yet earned.
3. Adjusting entry for revenue earned that was originally received as cash in advance in the previous month.
4. Adjusting entry for services received from a supplier, but not yet paid.
5. Adjusting entry for cash paid to a supplier for repair services not yet received.
6. Adjusting entry for repair services received that was originally paid as cash in advance to the supplier in the previous month.
7. Adjusting entry for salaries earned by employees, but not yet paid.
8. Adjusting entry for annual depreciation expense for equipment.

**Required**: For each description above, identify the likely journal entry debit and credit account.

---

**EXERCISE 3–9 (LO2) Adjusting Entries**

Turner Empire Co. employs 65 employees. The employees are paid every Monday for work done from the previous Monday to the end-of-business on Friday, or a 5-day work week. Each employee earns $80 per day.

**Required**:

1. Calculate the total weekly payroll cost and the salary adjustment at March 31, 2024.
2. Prepare the adjusting entry at March 31, 2024.
3. Prepare the subsequent cash entry on April 4, 2024.

---

**EXERCISE 3–10 (LO1,2,3) Adjusting Entries**

Below is a trial balance for Quertin Quick Fix Ltd. at October 31, 2024 with three sets of debit/credit columns. The first set is before the October month-end adjusting entries, and the third column is after the October month-end adjusting entries.

Quertin Quick Fix Ltd.
Trial Balance
At October 31, 2024

| | Unadjusted Trial Balance | | Adjustments | | Adjusted Trial Balance | |
|---|---|---|---|---|---|---|
| | Debit | Credit | Debit | Credit | Debit | Credit |
| Accounts payable | | $225,000 | | | | $225,500 |
| Accounts receivable | $325,000 | | | | $395,000 | |
| Accrued salaries payable | | 5,000 | | | | 9,500 |
| Accumulated depreciation, equipment | 1,500 | | | | | 2,500 |
| Advertising expense | 1,500 | | | | 1,500 | |
| Cash | 80,000 | | | | 118,700 | |
| Depreciation expense | 800 | | | | 1,800 | |
| Equipment | 150,000 | | | | 150,000 | |
| Land | 150,000 | | | | 150,000 | |
| Maintenance service expenses | 1,000 | | | | 1,000 | |
| Notes payable | | 210,000 | | | | 210,000 |
| Office supplies | 5,000 | | | | 5,000 | |
| Prepaid advertising expenses | 15,000 | | | | 16,300 | |
| Rent expense | 14,000 | | | | 14,000 | |
| Retained earnings | | 37,800 | | | | 37,800 |
| Salaries expense | 45,000 | | | | 49,500 | |
| Service revenue | | 300,000 | | | | 370,000 |
| Share capital | | 10,000 | | | | 10,000 |
| Unearned service revenue | | 10,000 | | | | 50,000 |
| Utilities expense | 12,000 | | | | 12,500 | |
| | $799,300 | $799,300 | | | $915,300 | $915,300 |

**Required**: Determine the differences for all the account balances and identify the most likely adjusting entries that would have been recorded in October to correspond to these differences.

---

**EXERCISE 3–11 (LO3) Prepare an Adjusted Trial Balance**

After Bernard Inc. completed its first year of operations on December 31, 2023, the following adjusted account balances appeared in the general ledger.

| Prepaid Advertising | |
|---|---|
| 1,000 | |

| Accounts Payable | |
|---|---|
| | 13,250 |

| Share Capital | |
|---|---|
| | 8,000 |

| Supplies | |
|---|---|
| 750 | |

| Subscription Revenue | |
|---|---|
| | 5,000 |

| Equipment | |
|---|---|
| 21,750 | |

| Salaries Payable | |
|---|---|
| | 700 |

| Advertising Expense | |
|---|---|
| 500 | |

| Acc. Dep'n – Equipment | |
|---|---|
| | 1,500 |

| Unearned Subscriptions | |
|---|---|
| | 10,000 |

| Commissions Expense | |
|---|---|
| 800 | |

| Dep'n Expense – Equipment | |
|---|---|
| 250 | |

| Maintenance Expense | |
|---|---|
| 200 | |

| Salaries Expense | |
|---|---|
| 10,200 | |

| Supplies Expense | |
|---|---|
| 2,500 | |

| Telephone Expense | |
|---|---|
| 100 | |

| Utilities Expense | |
|---|---|
| 400 | |

**Required**:Prepare an adjusted trial balance at December 31, 2023.

---

**EXERCISE 3–12 (LO6) Closing Entries**

Below is the adjusted trial balance for Quefort Ltd. as at September 30, 2024:

| | Debit | Credit |
|---|---|---|
| Accounts payable | | $ 23,250 |
| Accounts receivable | $106,800 | |
| Accrued salaries payable | | 8,700 |
| Accumulated depreciation, building | | 200 |
| Accumulated depreciation, equipment | | 3,200 |
| Advertising expense | 4,050 | |
| Building | 111,000 | |
| Cash | 87,300 | |
| Cash dividends | 5,000 | |
| Depreciation expense | 2,380 | |
| Equipment | 15,000 | |
| Income tax expense | 4,500 | |
| Income taxes payable | | 4,500 |
| Insurance expense | 3,700 | |
| Interest expense | 150 | |
| Interest payable | | 150 |
| Repair expense | 7,800 | |
| Notes payable | | 30,000 |
| Office supplies | 1,800 | |
| Prepaid insurance expense | 12,790 | |
| Rent expense | 22,500 | |
| Retained earnings | | 65,470 |
| Salaries expense | 41,700 | |
| Service revenue | | 276,000 |
| Share capital | | 1,500 |
| Shop supplies expense | 750 | |
| Unearned service revenue | | 37,500 |
| Utilities expense | 23,250 | |
| | $450,470 | $450,470 |

**Required**: Prepare the closing entries.

---

**EXERCISE 3–13 (LO6) Prepare Closing Entries and a Post-Closing Trial Balance**

The following alphabetized adjusted trial balance information is available for Willis Inc. at December 31, 2023. Assume all accounts have normal balances.

| | |
|---|---|
| Accounts Payable | $ 4,400 |
| Accounts Receivable | 3,600 |
| Accumulated Depreciation – Machinery | 2,800 |
| Accumulated Depreciation – Warehouse | 8,000 |
| Bank Loan | 47,600 |
| Cash | 12,000 |
| Commissions Earned | 20,000 |
| Depreciation Expense – Machinery | 900 |
| Depreciation Expense – Warehouse | 1,200 |
| Dividends | 14,000 |
| Insurance Expense | 1,800 |
| Interest Expense | 2,365 |
| Interest Payable | 1,200 |
| Land | 15,000 |
| Machinery | 20,000 |
| Retained Earnings | 36,000 |
| Salaries Expense | 33,475 |
| Salaries Payable | 1,970 |
| Share Capital | 52,100 |
| Subscriptions Revenue | 17,630 |
| Supplies | 2,500 |
| Supplies Expense | 15,800 |
| Unearned Fees | 800 |
| Utilities Expense | 2,860 |
| Warehouse | 67,000 |

**Required**: Prepare closing entries and a post-closing trial balance.

## Problems

---

**PROBLEM 3–1 (LO1,2) Adjusting Entries**

The following unrelated accounts are extracted from the records of Meekins Limited at December 31, its fiscal year-end:

| | | *Balance* | |
|---|---|---|---|
| | | *Unadjusted* | *Adjusted* |
| (a) | Prepaid Rent | $ 900 | $ 600 |
| (b) | Wages Payable | 500 | 700 |
| (c) | Income Taxes Payable | -0- | 1,000 |
| (d) | Unearned Commissions Revenue | 4,000 | 3,000 |
| (e) | Other Unearned Revenue | 25,000 | 20,000 |
| (f) | Advertising Expense | 5,000 | 3,500 |
| (g) | Depreciation Expense – Equipment | -0- | 500 |
| (h) | Supplies Expense | 850 | 625 |
| (i) | Truck Operation Expense | 4,000 | 4,500 |

**Required**: For each of the above unrelated accounts, prepare the most likely adjusting entry including plausible description/narrative.

---

**PROBLEM 3–2 (LO1,2) Adjusting Entries** Watch video

The unadjusted trial balance of Lukas Films Corporation includes the following account balances at December 31, 2023, its fiscal year-end. Assume all accounts have normal debit or credit balances as applicable.

| | |
|---|---|
| Prepaid Rent | $ 1,500 |
| Unused Supplies | -0- |
| Equipment | 2,400 |
| Unearned Advertising Revenue | 1,000 |
| Insurance Expense | 900 |
| Supplies Expense | 600 |
| Telephone Expense | 825 |
| Wages Expense | 15,000 |

The following information applies at December 31:

a. A physical count of supplies indicates that $100 of supplies have not yet been used at December 31.

b. A $75 telephone bill for December has been received but not recorded.

c. One day of wages amounting to $125 remains unpaid and unrecorded at December 31; the amount will be included with the first Friday payment in January.

d. The equipment was purchased December 1; it is expected to last 2 years. No depreciation has yet been recorded.

e. The prepaid rent is for three months: December 2023, January 2024, and February 2024.

f. Half of the unearned advertising has been earned at December 31.

g. The $900 balance in Insurance Expense is for a one-year policy, effective August 1, 2023.

**Required**: Prepare all necessary adjusting entries at December 31, 2023. Descriptions are not needed.

---

**PROBLEM 3–3 (LO1,2) Adjusting Entries**

The unadjusted trial balance of Mighty Fine Services Inc. includes the following account balances at December 31, 2023, its fiscal year-end. No adjustments have been recorded. Assume all accounts have normal debit or credit balances.

| | |
|---|---|
| Notes Receivable | $10,000 |
| Prepaid Rent | -0- |
| Prepaid Insurance | 600 |
| Unused Supplies | 500 |
| Bank Loan | 5,000 |
| Subscription Revenue | 9,000 |
| Rent Expense | 3,900 |
| Truck Operation Expense | 4,000 |

The following information applies to the fiscal year-end:

(a) Accrued interest of $250 has not yet been recorded on the Notes Receivable.

(b) The $600 prepaid insurance is for a one-year policy, effective September 1, 2023.

(c) A physical count indicates that $300 of supplies is still on hand at December 31.

(d) Interest on the bank loan is paid on the fifteenth day of each month; the unrecorded interest for the last 15 days of December amounts to $25.

(e) The Subscription Revenue account consists of one $9,000 cash receipt for a 6-month subscription to the corporation's Computer Trends report; the subscription period began December 1, 2023.

(f) Three days of salary amounting to $300 remain unpaid and unrecorded at December 31.

(g) The rent expense account should reflect 12 months of rent. The monthly rent expense is $300.

(h) A bill for December truck operation expense has not yet been received; an amount of $400 is owed.

**Required**: Prepare all necessary adjusting entries at December 31, 2023. Descriptions are not needed.

---

**PROBLEM 3–4 (LO1,2) Adjusting Entries**

The following accounts are taken from the records of Bill Pitt Corp. at the end of its first 12 months of operations ended December 31, 2023, prior to any adjustments.

In addition to the balances in each set of accounts, additional data are provided for adjustment purposes if applicable. Treat each set of accounts independently of the others.

| Truck | |
|---|---|
| 6,000 | |

| Depreciation Expense – Truck | |
|---|---|
| 600 | |

| Acc. Dep'n – Truck | |
|---|---|
| | 600 |

(a) Additional information: The truck was purchased July 1; it has an estimated useful life of 4 years.

| Cash | |
|---|---|
| 600 | |

| Unearned Rent | |
|---|---|
| | -0- |

| Rent Earned | |
|---|---|
| | 600 |

(b) Additional information: A part of the office was sublet during the entire 12 months for $50 per month.

| Unused Supplies | |
|---|---|
| | |

| Supplies Expense | |
|---|---|
| 1,250 | |

(c) Additional information: A physical inventory indicated $300 of supplies still on hand at December 31.

| Prepaid Rent | |
|---|---|
| 1,200 | |

| Rent Expense | |
|---|---|
| 4,400 | |

(d) Additional information: The monthly rent is $400.

| Wages Expense | |
|---|---|
| 6,000 | |

| Wages Payable | |
|---|---|
| | -0- |

(e) Additional information: Unrecorded wages at December 31 amount to $250.

| Bank Loan | |
|---|---|
| | 8,000 |

| Interest Expense | |
|---|---|
| 600 | |

| Interest Payable | |
|---|---|
| | 100 |

(f) Additional information: The bank loan bears interest at 10 per cent. The money was borrowed on January 1, 2023.

| Cash | |
|---|---|
| | 1,000 |

| Utilities Expense | |
|---|---|
| 1,200 | |

| Utilities Payable | |
|---|---|
| | 200 |

(g) Additional information: The December bill has not yet been received or any accrual made; the amount owing at December 31 is estimated to be another $150.

| Cash | |
|---|---|
| | 1,200 |

| Prepaid Insurance | |
|---|---|
| 600 | |

| Insurance Expense | |
|---|---|
| 600 | |

(h) Additional information: A $1,200 one-year insurance policy had been purchased effective February 1, 2023; there is no other insurance policy in effect.

| Unearned Rent Revenue | |
|---|---|
| | 900 |

| Rent Earned | |
|---|---|
| | -0- |

(i) Additional information: The Unearned Rent Revenue balance applies to three months: November 2023, December 2023, and January 2024. $600 of the $900 has been earned as at December 31, 2023.

| Cash | | Other Unearned Revenue | | Commissions Earned | |
|---|---|---|---|---|---|
| 25,200 | | | -0- | | 25,200 |

(j) Additional information: $2,000 of the total $25,200 balance in commission revenue has not been earned at December 31, 2023.

**Required**: Prepare all necessary adjusting entries. Include descriptions/narratives.

---

**PROBLEM 3–5 (LO1,2,3) Adjusting Accounts**

Roth Contractors Corporation was incorporated on December 1, 2023 and had the following transactions during December:

**Part A**

(a) Issued share capital for $5,000 cash.

(b) Paid $1,200 for three months' rent: December 2023; January and February 2024.

(c) Purchased a used truck for $10,000 on credit (recorded as an account payable).

(d) Purchased $1,000 of supplies on credit. These are expected to be used during the month (recorded as expense).

(e) Paid $1,800 for a one-year truck insurance policy, effective December 1.

(f) Billed a customer $4,500 for work completed to date.

(g) Collected $800 for work completed to date.

(h) Paid the following expenses: advertising, $350; interest, $100; telephone, $75; truck operation, $425; wages, $2,500.

(i) Collected $2,000 of the amount billed in (f) above.

(j) Billed customers $6,500 for work completed to date.

(k) Signed a $9,000 contract for work to be performed in January.

(l) Paid the following expenses: advertising, $200; interest, $150; truck operation, $375; wages, $2,500.

(m) Collected a $2,000 advance on work to be done in January (the policy of the corporation is to record such advances as revenue at the time they are received).

(n) Received a bill for $100 for electricity used during the month (recorded as utilities expense).

**Required**:

1. Open general ledger T-accounts for the following: Cash (101), Accounts Receivable (110), Prepaid Insurance (161), Prepaid Rent (162), Truck (184), Accounts Payable (210), Share Capital (320), Repair Revenue (450), Advertising Expense (610), Interest Expense (632), Supplies Expense (668), Telephone Expense (669), Truck Operation Expense (670), Utilities Expense (676), and Wages Expense (677).
2. Prepare journal entries to record the December transactions. Descriptions are not needed.
3. Post the entries to general ledger T-accounts.

**Part B**

At December 31, the following information is made available for the preparation of adjusting entries.

(o) One month of the Prepaid Insurance has expired.

(p) The December portion of the December 1 rent payment has expired.

(q) A physical count indicates that $350 of supplies is still on hand.

(r) The amount collected in transaction (m) is unearned at December 31.

(s) Three days of wages for December 29, 30, and 31 are unpaid; the unpaid amount of $1,500 will be included in the first Friday wages payment in January.

(t) The truck has an estimated useful life of 4 years.

**Required**:

4. Open additional general ledger T-accounts for the following: Supplies (173), Accumulated Depreciation – Truck (194), Wages Payable (237), Unearned Revenue (249), Depreciation Expense – Truck (624), Insurance Expense (631), and Rent Expense (654).
5. Prepare all necessary adjusting entries. Omit descriptions.
6. Post the entries to general ledger T-accounts and calculate balances.
7. Prepare an adjusted trial balance at December 31, 2023.

**PROBLEM 3–6 (LO6) Closing Accounts**

**Required**:

1. Using the adjusted trial balance answer from Problem 3–5, journalize the appropriate closing entries (create additional accounts if required).
2. Prepare a post-closing trial balance.

**PROBLEM 3–7 (LO1,2,3,4,5,6) Comprehensive Accounting Cycle Review Problem**

The unadjusted trial balance of Packer Corporation showed the following balances at the end of its first 12-month fiscal year ended August 31, 2023:

| | *Balance* | |
|---|---|---|
| | *Debits* | *Credits* |
| Cash | $12,000 | |
| Accounts Receivable | 3,600 | |
| Prepaid Insurance | -0- | |
| Supplies | 2,500 | |
| Land | 15,000 | |
| Building | 60,000 | |
| Furniture | 3,000 | |
| Equipment | 20,000 | |
| Accumulated Depreciation – Building | | $ -0- |
| Accumulated Depreciation – Equipment | | -0- |
| Accumulated Depreciation – Furniture | | -0- |
| Accounts Payable | | 4,400 |
| Salaries Payable | | -0- |
| Interest Payable | | -0- |
| Unearned Commissions Revenue | | 1,200 |
| Unearned Subscriptions Revenue | | 800 |
| Bank Loan | | 47,600 |
| Share Capital | | 52,100 |
| Retained Earnings | | -0- |
| Income Summary | | -0- |
| Commissions Earned | | 37,900 |
| Subscriptions Revenue | | 32,700 |
| Advertising Expense | 4,300 | |
| Depreciation Expense – Building | -0- | |
| Depreciation Expense – Equipment | -0- | |
| Depreciation Expense – Furniture | -0- | |
| Insurance Expense | 1,800 | |
| Interest Expense | 2,365 | |
| Salaries Expense | 33,475 | |
| Supplies Expense | 15,800 | |
| Utilities Expense | 2,860 | |
| Totals | $176,700 | $176,700 |

At the end of August, the following additional information is available:

(a) The company's insurance coverage is provided by a single comprehensive 12-month policy that began on March 1, 2023.

(b) Supplies on hand total $2,850.

(c) The building has an estimated useful life of 50 years.

(d) The furniture has an estimated useful life of ten years.

(e) The equipment has an estimated useful life of 20 years.

(f) Interest of $208 on the bank loan for the month of August will be paid on September 1, when the regular $350 payment is made.

(g) A review of the unadjusted balance in the unearned commissions revenue account indicates the unearned balance should be $450.

(h) A review of the unadjusted balance in the subscription revenue account reveals that $2,000 has not been earned.

(i) Salaries that have been earned by employees in August but are not due to be paid to them until the next payday (in September) amount to $325.

**Required**:

1. Set up necessary general ledger T-accounts and record their unadjusted balances. Create and assign account numbers that you deem appropriate.
2. Prepare the adjusting entries. Descriptions are not needed.
3. Post the adjusting entries to the general ledger T-accounts and calculate balances.
4. Prepare an adjusted trial balance at August 31, 2023.
5. Prepare an income statement and balance sheet.
6. Prepare and post the closing entries.
7. Prepare a post-closing trial balance.

---

**PROBLEM 3–8 (LO1,2,3) Challenge Question – Adjusting Entries**

Below is an unadjusted trial balance for Smith and Smith Co., at June 30, 2024.

Smith and Smith Co.
Unadjusted Trial Balance
At June 30, 2024

| | Debit | Credit |
|---|---|---|
| Cash | $ 50,400 | |
| Accounts receivable | 25,000 | |
| Shop supplies | 1,500 | |
| Prepaid insurance expense | 4,500 | |
| Prepaid advertising expense | 2,000 | |
| Prepaid rent expense | – | |
| Building | 74,000 | |
| Accumulated depreciation, building | | $ – |
| Equipment | 10,000 | |
| Accumulated depreciation, equipment | | 2,000 |
| Accounts payable | | 12,000 |
| Accrued salaries payable | | 15,500 |
| Interest payable | | – |
| Income taxes payable | | – |
| Notes payable | | 20,000 |
| Unearned service revenue | | 30,000 |
| Share capital | | 1,000 |
| Retained earnings | | 24,900 |
| Service revenue | | 125,000 |
| Salaries expense | 22,000 | |
| Insurance expense | – | |
| Interest expense | – | |
| Shop supplies expense | 200 | |
| Advertising expense | 2,200 | |
| Depreciation expense | 1,400 | |
| Maintenance service expense | 5,200 | |
| Rent expense | 20,000 | |
| Income tax expense | – | |
| Utilities expense | 12,000 | |
| | $230,400 | $230,400 |

Additional information for June not yet recorded:

a. Unbilled and uncollected work to June 30 totals $45,000.

b. An analysis of prepaid advertising shows that $500 of the balance was consumed.

c. A shop supplies count on June 30 shows that $1,200 are on hand.

d. Equipment has an estimated useful life of ten years and an estimated residual value of $500.

e. The records show that fifty percent of the work, for a $10,000 fee received in advance from a customer and recorded last month, is now completed.

f. Salaries of $5,800 for employees for work done to the end of June has not been paid.

g. Utilities invoice for services to June 22 totals $3,500.

h. Accrued revenues of $7,800 previously recorded to accounts receivable were collected.

i. A building was purchased at the end of May. Its estimated useful life is fifty years and has an estimated residual value of $10,000.

j. Rent expense of $5,000 cash for July has been paid and recorded directly to rent expense.

k. Interest for the 6% note payable has not yet been recorded for June.

l. Income taxes of $3,000 is owing but not yet paid.

m. Unrecorded and uncollected service revenue of $9,000 has been earned.

n. A two year, $1,800 insurance policy was purchased on June 1 and recorded to prepaid insurance expense.

o. The prior balance in the unadjusted prepaid insurance account (excluding the insurance in item n. above), shows that $300 of that balance is not yet used.

**Required**:

1. Prepare the adjusting and correcting entries for June.
2. Prepare an adjusted trial balance at June 30, 2024.

---

**PROBLEM 3–9 (LO4) Challenge Question – Preparation of Financial Statements**

Using the adjusted trial balance in PROBLEM 3–8 above:

**Required**: Prepare an income statement, statement of changes in equity and a balance sheet as at June 30, 2024. (Hint: For the balance sheet, also include a subtotal for each asset's book value).

---

**PROBLEM 3–10 (LO6) Closing Entries and Post-Closing Trial Balance**

**Required**: Using the adjusted trial balance in PROBLEM 3–8 above:

a. Assuming that June 30, 2024, is the year-end, prepare the closing journal entries.

b. Prepare a post-closing trial balance at June 30, 2024.

# Chapter 4

## The Classified Balance Sheet and Related Disclosures

Chapters 1 through 3 discussed and illustrated the steps in the accounting cycle. They also discussed the concepts, assumptions, and procedures that provide a framework for financial accounting as a whole. Chapter 4 expands upon the content and presentation of financial statements. It reinforces what has been learned in previous chapters and introduces the classification or grouping of accounts on the balance sheet. Chapter 4 expands on notes to the financial statements, the auditor's report, and the management's responsibility report which are all integral to meeting disclosure requirements.

### Chapter 4 Learning Objectives

LO1 – Explain the importance of and challenges related to basic financial statement disclosure.

LO2 – Explain and prepare a classified balance sheet.

LO3 – Explain the purpose and content of notes to financial statements.

LO4 – Explain the purpose and content of the auditor's report.

LO5 – Explain the purpose and content of the report that describes management's responsibility for financial statements.

### Concept Self-Check

Use the following as a self-check while working through Chapter 4.

1. What shapes and limits an accountant's measurement of wealth?
2. Are financial statements primarily intended for internal or external users?
3. What is a classified balance sheet?
4. What are the classifications within a classified balance sheet?
5. What are current assets?

6. What are non-current assets?
7. What are current liabilities?
8. What are long-term liabilities?
9. What is the current-portion of a long-term liability?
10. What is the purpose and content of the notes to the financial statements?
11. What is the purpose and content of the auditor's report?
12. What is the purpose and content of the report that describes management's responsibility for financial statements?

**NOTE:** The purpose of these questions is to prepare you for the concepts introduced in the chapter. Your goal should be to answer each of these questions as you read through the chapter. If, when you complete the chapter, you are unable to answer one or more the Concept Self-Check questions, go back through the content to find the answer(s). Solutions are not provided to these questions.

## 4.1 Financial Statement Disclosure Decisions

LO1 – Explain the importance of and challenges related to basic financial statement disclosure.

Financial statements communicate information, with a focus on the needs of financial statement users such as a company's investors and creditors. Accounting information should make it easier for management to allocate resources and for shareholders to evaluate management. A key objective of financial statements is to fairly present the entity's economic resources, obligations, equity, and financial performance.

Fulfilling these objectives is challenging. Accountants must make a number of subjective decisions about how to apply generally accepted accounting principles. For example, they must decide how to measure wealth and how to apply recognition criteria. They must also make practical cost-benefit decisions about how much information is useful to disclose. Some of these decisions are discussed in the following section.

### Making Accounting Measurements

Economists often define wealth as an increase or decrease in the entity's ability to purchase goods and services. Accountants use a more specific measurement — they consider only increases and

decreases resulting from actual transactions. If a transaction has not taken place, they do not record a change in wealth.

The accountant's measurement of wealth is shaped and limited by the generally accepted accounting principles introduced and discussed in Chapter 1, including cost, the monetary unit, the business entity, timeliness, recognition, and going concern. These principles mean that accountants record transactions in one currency (for example, dollars). They assume the monetary currency retains its purchasing power. Changes in market values of assets are generally not recorded. The entity is expected to continue operating into the foreseeable future.

Economists, on the other hand, do recognize changes in market value. For example, if an entity purchased land for $100,000 that subsequently increased in value to $125,000, economists would recognize a $25,000 increase in wealth. International Financial Reporting Standards generally do not recognize this increase until the entity actually disposes of the asset; accountants would continue to value the land at its $100,000 purchase cost. This practice is based on the application of the cost principle, which is a part of GAAP.

Economic wealth is also affected by changes in the purchasing power of the dollar. For example, if the entity has cash of $50,000 at the beginning of a time period and purchasing power drops by 10% because of inflation, the entity has lost wealth because the $50,000 can purchase only $45,000 of goods and services. Conversely, the entity gains wealth if purchasing power increases by 10%. In this case, the same $50,000 can purchase $55,000 worth of goods and services. However, accountants do not record any changes because the monetary unit principle assumes that the currency unit is a stable measure.

## Qualities of Accounting Information

Financial statements are focused primarily on the needs of external users. To provide information to these users, accountants make cost-benefit judgments. They use materiality considerations to decide how particular items of information should be recorded and disclosed. For example, if the costs associated with financial information preparation are too high or if an amount is not sufficiently large or important, a business might implement a materiality policy for various types of asset purchases to guide how such costs are to be recorded. For example, a business might have a materiality policy for the purchase of office equipment whereby anything costing $100 or less is expensed immediately instead of recorded as an asset. In this type of situation, purchases of $100 or less are recorded as an expense instead of an asset to avoid having to record depreciation expense, a cost-benefit consideration that will not impact decisions made by external users of the business's financial statements.

Accountants must also make decisions based on whether information is useful. Is it comparable to prior periods? Is it verifiable? Is it presented with clarity and conciseness to make it understandable? Readers' perception of the usefulness of accounting information is determined by how well those who prepare financial statements address these qualitative considerations.

## 4.2 Classified Balance Sheet

LO2 – Explain and prepare a classified balance sheet.

The accounting cycle and double-entry accounting have been the focus of the preceding chapters. This chapter focuses on the presentation of financial statements, including how financial information is *classified* (the way accounts are grouped) and what is disclosed.

A common order for the presentation of financial statements is:

1. Income statement
2. Statement of changes in equity
3. Balance sheet
4. Statement of cash flows
5. Notes to the financial statements

In addition, the financial statements are often accompanied by an auditor's report and a statement entitled "Management's Responsibility for Financial Statements." Each of these items will be discussed below. Financial statement information must be disclosed for the most recent year with the prior year for comparison.

Because external users of financial statements have no access to the entity's accounting records, it is important that financial statements be organized in a manner that is easy to understand. Thus, financial data are grouped into useful, similar categories within *classified financial statements*, as discussed below.

### The Classified Balance Sheet

A **classified balance sheet** organizes the asset and liability accounts into categories. The previous chapters used an **unclassified balance sheet** which included only three broad account groupings: assets, liabilities, and equity. The classification of asset and liability accounts into meaningful categories is designed to facilitate the analysis of balance sheet information by external users. Assets and liabilities are classified as either *current* or *non-current*. Another common term for *non-current* is *long-term*. Non-current assets, also referred to as long-term assets, can be classified further into *long-term investments*; *property, plant and equipment*; and *intangible assets*. The asset and liability classifications are summarized below:

| Assets | Liabilities |
| --- | --- |
| Non-current or long-term assets: | Non-current or long-term liabilities |
| Long-term investments | |
| Property, plant and equipment (PPE) | |
| Intangible assets | |

## Current Assets

**Current assets** are those resources that the entity expects to convert to cash, or to consume during the next year or within the operating cycle of the entity, whichever is longer. Examples of current assets include:

- cash, comprising paper currency and coins, deposits at banks, cheques, and money orders.
- short-term investments, the investment of cash that will not be needed immediately, in short-term, interest-bearing notes that are easily convertible into cash.
- accounts receivable that are due to be collected within one year.
- notes receivable, usually formalized account receivables — written promises to pay specified amounts with interest, and due to be collected within one year.
- merchandise inventory that is expected to be sold within one year.

The current asset category also includes accounts whose future benefits are expected to expire in a short period of time. These are not expected to be converted into cash, and include:

- prepaid expenses that will expire within the next year, usually consisting of advance payments for insurance, rent, and other similar items.
- supplies on hand at the end of an accounting year that will be used during the next year.

On the balance sheet, current assets are normally reported before non-current assets. They are listed by decreasing levels of **liquidity** — their ability to be converted into cash. Therefore, cash appears first under the current asset heading since it is already liquid.

## Non-current Assets

**Non-current assets** are assets that will be useful for more than one year; they are sometimes referred to as **long-lived assets**. Non-current assets include property, plant, and equipment (PPE) items used in the operations of the business. Some examples of PPE are: a) land, b) buildings, c) equipment, and d) motor vehicles such as trucks.

Other types of non-current assets include long-term investments and intangible assets. **Long-term investments** are held for more than one year or the operating cycle and include long-term notes receivable and investments in shares and bonds. **Intangible assets** are resources that do not have a physical form and whose value comes from the rights held by the owner. They are used over the long term to produce or sell products and services and include copyrights, patents, trademarks, and franchises.

## Current Liabilities

**Current liabilities** are obligations that must be paid within the next 12 months or within the entity's next operating cycle, whichever is longer. They are shown first in the liabilities section of the balance sheet and listed in order of their due dates, with any bank loans shown first. Examples of current liabilities include:

- bank loans (or notes payable) that are payable on demand or due within the next 12 months
- accounts payable
- accrued liabilities such as interest payable and wages payable
- unearned revenue
- the current portion of long-term liabilities
- income taxes payable.

The **current portion of a long-term liability** is the principal amount of a long-term liability that is to be paid within the next 12 months. For example, assume a $24,000 note payable issued on January 1, 2023 where principal is repaid at the rate of $1,000 per month over two years. The current portion of this note on the January 31, 2023 balance sheet would be $12,000 (calculated as 12 months X $1,000/month). The remaining principal would be reported on the balance sheet as a long-term liability.

## Non-Current or Long-Term Liabilities

**Non-current liabilities**, also referred to as long-term liabilities, are borrowings that do not require repayment for more than one year, such as the long-term portion of a bank loan or a mortgage. A **mortgage** is a liability that is secured by real estate.

## Equity

The equity section of the classified balance sheet consists of two major accounts: share capital and retained earnings.

The following illustrates the presentation of Big Dog Carworks Corp.'s classified balance sheet after several years of operation.

Big Dog Carworks Corp.
Balance Sheet
At December 31, 2023

| *Assets* | | | *Liabilities* | | |
|---|---|---|---|---|---|
| | *2023* | *2022* | | *2023* | *2022* |
| *Current assets* | | | *Current liabilities* | | |
| Cash | $ 10,800 | $ 12,000 | Borrowings (Note 5) | $ 39,000 | $ 82,250 |
| Accounts receivable | 26,000 | 24,000 | Accounts payable | 24,000 | 22,000 |
| Merchandise inventories | 120,000 | 100,000 | Income taxes payable | 15,000 | 10,000 |
| Prepaid expenses | 1,200 | 570 | Total current liabilities | $ 78,000 | $114,250 |
| Total current assets | $158,000 | $136,570 | | | |
| *Property, plant, and equipment* (Note 4) | 126,645 | 10,430 | | | |
| | | | *Long-term liabilities* | | |
| | | | Borrowings (Note 5) | 163,145 | -0- |
| | | | Total liabilities | $241,145 | $114,250 |
| | | | *Equity* | | |
| | | | Share capital (Note 6) | $ 11,000 | $ 11,000 |
| | | | Retained earnings | 32,500 | 21,750 |
| | | | Total equity | 43,500 | 32,750 |
| Total assets | $284,645 | $147,000 | Total liabilities and equity | $284,645 | $147,000 |

Notes are included at the end of the financial statements. Among other purposes, they provide details about a particular category on the balance sheet or income statement.

The balance sheet can be presented in the **account form** balance sheet, as shown above where liabilities and equities are presented to the right of the assets. An alternative is the **report form** balance sheet where liabilities and equity are presented below the assets.

### The Classified Income Statement

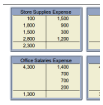
Recall that the income statement summarizes a company's revenues less expenses over a period of time. An income statement for BDCC was presented in Chapter 1 as copied below.

Big Dog Carworks Corp.
Income Statement
For the Month Ended January 31, 2023

| | | |
|---|---|---|
| *Revenues* | | |
| Repair revenues | | $10,000 |
| *Expenses* | | |
| Rent expense | $1,600 | |
| Salaries expense | 3,500 | |
| Supplies expense | 2,000 | |
| Fuel expense | 700 | |
| Total expenses | | 7,800 |
| Net income | | $2,200 |

The format used above was sufficient to disclose relevant financial information for Big Dog's simple start-up operations. Like the classified balance sheet, an income statement can be classified as well as prepared with comparative information. The classified income statement will be discussed in detail in Chapter 5.

Regardless of the type of financial statement, any items that are *material* must be disclosed separately so users will not otherwise be misled. Materiality is a matter for judgment. Office supplies of $2,000 per month used by BDCC in January 2023 might be a material amount and therefore disclosed as a separate item on the income statement for the month ended January 31, 2023. If annual revenues grew to $1 million, $2,000 per month for supplies might be considered immaterial. These expenditures would then be grouped with other similar items and disclosed as a single amount.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Classified Balance Sheets.

## 4.3 Notes to Financial Statements

LO3 – Explain the purpose and content of notes to financial statements.

As an integral part of its financial statements, a company provides *notes to the financial statements*. In accordance with the disclosure principle, **notes to the financial statements** provide relevant details that are not included in the body of the financial statements. For instance, details about property, plant, and equipment are shown in Note 4 in the following sample notes to the

financial statements. The notes help external users understand and analyze the financial statements.

Although a detailed discussion of disclosures that might be included as part of the notes is beyond the scope of an introductory financial accounting course, a simplified example of note disclosure is shown below for Big Dog Carworks Corp.

Big Dog Carworks Corp.
Notes to the Financial Statements
For the Year Ended December 31, 2023

1. Nature of operations
   The principal activity of Big Dog Carworks Corp. is the servicing and repair of vehicles.

2. General information and statement of compliance with IFRS
   Big Dog Carworks Corp. is a limited liability company incorporated and domiciled in Canada. Its registered office and principal place of business is 123 Fox Street, Owlseye, Alberta, T1K 0L1, Canada. Big Dog Carworks Corp.'s shares are listed on the Toronto Stock Exchange.

   The financial statements of Big Dog Carworks Inc. have been prepared in accordance with International Financial Reporting Standards (IFRS) as issued the International Accounting Standards Boards (IASB).

   The financial statements for the year ended December 31, 2023 were approved and authorised for issue by the board of directors on March 17, 2024.

3. Summary of accounting policies
   The financial statements have been prepared using the significant accounting policies and measurement bases summarized below.

   (a) Revenue

   Revenue arises from the rendering of service. It is measured by reference to the fair value of consideration received or receivable.

   (b) Operating expenses

   Operating expenses are recognized in the income statement upon utilization of the service or at the date of their origin.

   (c) Borrowing costs

   Borrowing costs directly attributable to the acquisition, construction, or production of property, plant, and equipment are capitalized during the period of time that is necessary to complete and prepare the asset for its intended use or sale. Other borrowing costs are expensed in the period in which they are incurred and reported as interest expense.

(d) Property, plant, and equipment

Land held for use in production or administration is stated at cost. Other property, plant, and equipment are initially recognized at acquisition cost plus any costs directly attributable to bringing the assets to the locations and conditions necessary to be employed in operations. They are subsequently measured using the cost model: cost less subsequent depreciation.

Depreciation is recognized on a straight-line basis to write down the cost, net of estimated residual value. The following useful lives are applied:

Buildings: 25 years

Equipment: 10 years

Truck: 5 years

Residual value estimates and estimates of useful life are updated at least annually.

(e) Income taxes

Current income tax liabilities comprise those obligations to fiscal authorities relating to the current or prior reporting periods that are unpaid at the reporting date. Calculation of current taxes is based on tax rates and tax laws that have been enacted or substantively enacted by the end of the reporting period.

(f) Share capital

Share capital represents the nominal value of shares that have been issued.

(g) Estimation uncertainty

When preparing the financial statements, management undertakes a number of judgments, estimates, and assumptions about the recognition and measurement of assets, liabilities, income, and expenses. Information about estimates and assumptions that have the most significant effect on recognition and measurement of assets, liabilities, income, and expenses is provided below. Actual results may be substantially different.

4. Property, plant, and equipment

Details of the company's property, plant, and equipment and their carrying amounts at December 31 are as follows:

| | 2023 | | | | | 2022 |
|---|---|---|---|---|---|---|
| | *Land* | *Building* | *Equip.* | *Truck* | *Total* | *Total* |
| *Gross Carrying Amount* | | | | | | |
| Balance, January 1 | $ -0- | $ -0- | $3,000 | $8,000 | $ 11,000 | $ 11,000 |
| Additions | 30,000 | 90,000 | | | 120,000 | |
| Balance, January 31 | 30,000 | 90,000 | 3,000 | 8,000 | 131,000 | 11,000 |
| *Depreciation* | | | | | | |
| Balance, January 1 | | -0- | 90 | 480 | 570 | 285 |
| Depreciation for year | | 3,500 | 45 | 240 | 3,785 | 285 |
| Balance, December 31 | | 3,500 | 135 | 720 | 4,355 | 570 |
| *Carrying Amount* | | | | | | |
| December 31 | $30,000 | $86,500 | $2,865 | $7,280 | $126,645 | $ 10,430 |

These amounts agree to the amount of PPE shown in the assets section of BDCC's balance sheet.

5. Borrowings

Borrowings include the following financial liabilities measured at cost:

| | Current | | Non-Current | |
|---|---|---|---|---|
| | 2023 | 2022 | 2023 | 2022 |
| Demand bank loan | $ 20,000 | $ 52,250 | $ -0- | $ -0- |
| Subordinated shareholder loan | 13,762 | 30,000 | -0- | -0- |
| Mortgage | 5,238 | -0- | 163,145 | -0- |
| Total carrying amount | $39,000 | $82,250 | $163,145 | $ -0- |

The bank loan is due on demand and bears interest at 6% per year. It is secured by accounts receivable and inventories of the company.

The shareholder loan is due on demand, non-interest bearing, and unsecured.

The mortgage is payable to First Bank of Capitalville. It bears interest at 5% per year and is amortized over 25 years. Monthly payments including interest are $960. It is secured by land and buildings owned by the company. The terms of the mortgage will be re-negotiated in 2026.

6. Share capital

The share capital of Big Dog Carworks Corp. consists of fully-paid common shares with a stated value of $1 each. All shares are eligible to receive dividends, have their capital repaid, and represent one vote at the annual shareholders' meeting. There were no shares issued during 2022 or 2023.

## 4.4 Auditor's Report

LO4 – Explain the purpose and content of the auditor's report.

Financial statements are often accompanied by an auditor's report. An **audit** is an external examination of a company's financial statement information and its system of *internal controls*.

**Internal controls** are the processes instituted by management of a company to direct, monitor, and measure the accomplishment of its objectives. This includes the prevention and detection of fraud and error. An audit seeks not certainty, but reasonable assurance that the financial statement information is not materially misstated.

The auditor's report is a structured statement issued by an independent examiner, usually a professional accountant, who is contracted by the company to report the audit's findings to the company's board of directors. An audit report provides some assurance to present and potential investors and creditors that the company's financial statements are trustworthy. Therefore, it is a useful means to reduce the risk of their financial decisions.

An example of an unqualified auditor's report for BDCC is shown below, along with a brief description of each component. Put in simple terms, an **unqualified auditor's report** indicates that the financial statements are truthful and a **qualified auditor's report** is one that indicates the financial statements are not or may not be truthful.

The auditor's independence from the company is stated.

INDEPENDENT AUDITOR'S REPORT

The audit report is addressed to the board.

The Board of Directors of Big Dog Carworks Corp.
Owiseye, Alberta

The audited information is described.

I have audited the accompanying financial statements of Big Dog Carworks Corp., which comprise the balance sheet as at December 31, 2023, the income statement, statement of changes in equity, and statement of cash flows for the year then ended, and a summary of significant accounting policies and other explanatory information.

Management Responsibility for the Financial Statements

Management's responsibilities are described.

Management is responsible for the preparation and fair presentation of these financial statements in accordance with Canadian generally accepted accounting principles, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

The auditor's responsibilities and the audit standards are described.

My responsibility is to express an opinion on the financial statements based on my audit. I conducted my audit in accordance with Canadian generally accepted auditing standards. Those standards require that I comply with ethical requirements, and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

The audit procedures are described in general terms.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgement, including assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluation of the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statement.

A conclusion about the adequacy of audit evidence is stated.

I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my audit opinion.

Opinion

An opinion is expressed about the financial statement information.

In my opinion, the financial statements present fairly, in all material aspects, the financial position of Big Dog Carworks Corp. as at December 31, 2023, and its financial performance and its cash flows for the year then ended in accordance with Canadian generally accepted accounting principles.

The report is signed by the auditor and dated.

(signed)
H. K. Walker, CPA
March 15, 2024
Anywhereville, AB

## 4.5 Management's Responsibility for Financial Statements

LO5 – Explain the purpose and content of the report that describes management's responsibility for financial statements.

The final piece of information often included with the annual financial statements is a statement describing management's responsibility for the accurate preparation and presentation of financial statements. This statement underscores the division of duties involved with the publication of financial statements. Management is responsible for preparing the financial statements, including estimates that underlie the accounting numbers. An example of an estimate is the useful life of long-lived assets in calculating depreciation.

The independent auditor is responsible for examining the financial statement information as prepared by management, including the reasonableness of estimates, and then expressing an opinion on their accuracy. In some cases, the auditor may assist management with aspects of financial statement preparation. For instance, the auditor may provide guidance on how a new accounting standard will affect financial statement presentation or other information disclosure. Ultimately, however, the preparation of financial statements is management's responsibility.

An example of a statement describing management's responsibility for the preparation and presentation of annual financial statements is shown below.

MANAGEMENT'S RESPONSIBILITY FOR FINANCIAL STATEMENTS

Management's responsibility for all aspects of financial statement presentation and disclosure is expressly stated.

The accompanying financial statements of the company are the responsibility of management. The financial statements were prepared by management in accordance with accounting principles generally accepted in Canada, applied on a consistent basis, and conform in all material respects with International Accounting Standards. The significant accounting policies, which management believes are appropriate for the company, are described in Note 3 to the financial statements.

Management's responsibility for estimates used and maintenance of internal controls is acknowledged.

Management is responsible for the integrity and objectivity of the financial statements. Estimates are necessary in the preparation of these statements and, based on careful judgements, have been properly reflected. Management has established systems of internal control that are designed to provide reasonable assurance that assets are safeguarded from loss or unauthorized use, and to produce reliable accounting records for the preparation of financial information.

| | |
|---|---|
| The board of directors' and audit committee's respective roles are explained. | The board of directors is responsible for ensuring that management fulfills its responsibilities for financial reporting and internal control. The audit committee of the board, which is comprised solely of directors who are not employees of the company, is appointed by the board of directors annually. The audit committee of the board meets regularly with financial management of the company and with the shareholders' independent auditor to discuss internal controls, audit matters, including audit scope and auditor remuneration, and financial reporting issues. The independent shareholders' auditor has unrestricted access to the audit committee. The audit committee reviews the annual financial statements and reporting to the board, and makes recommendations with respect to their acceptance. The audit committee also makes recommendations to the board with respect to the appointment and remuneration of the company's auditor. |
| Management acknowledges its obligation to oversee all aspects of the company's operations in a legal and ethical manner. | Management recognizes its responsibility for conducting the company's affairs in compliance with established financial standards and applicable laws, and maintains proper standards of conduct for its activities. |
| The officer responsible for the financial affairs of the company signs and dates the statement. | (signed)<br>Bill Brown II, Chief Financial Officer<br>March 3, 2023 |

## Summary of Chapter 4 Learning Objectives

### LO1 – Explain the importance of and challenges related to basic financial statement disclosure.

The objective of financial statements is to communicate information to meet the needs of external users. In addition to recording and reporting verifiable financial information, accountants make decisions regarding how to measure transactions. Applying GAAP can present challenges when judgment must be applied as in the case of cost-benefit decisions and materiality.

### LO2 – Explain and prepare a classified balance sheet.

A classified balance sheet groups assets and liabilities as follows:

| **Assets:** | **Liabilities:** |
|---|---|
| Current assets | Current liabilities |
| Non-current assets:<br>• Property, plant, and equipment<br>• Long-term investments<br>• Intangible assets | Non-current or long-term liabilities |

Current assets are those that are used within one year or one operating cycle, whichever is longer, and include cash, accounts receivables, and supplies. Non-current assets are used beyond one year or one operating cycle. There are three types of non-current assets: property, plant, and equipment (PPE), long-term investments, and intangible assets. Long-term investments include investments in shares and bonds. Intangible assets are rights held by the owner and do not have a physical substance; they include copyrights, patents, franchises, and trademarks. Current liabilities must be paid within one year or one operating cycle, whichever is longer. Long-term liabilities are paid beyond one year or one operating cycle. Income statements are also classified (discussed in Chapter 5).

## LO3 – Explain the purpose and content of notes to financial statements.

In accordance with the GAAP principle of full disclosure, relevant details not contained in the body of financial statements are included in the accompanying notes to financial statements. Notes would include a summary of accounting policies, details regarding property, plant, and equipment assets, and specifics about liabilities such as the interest rates and repayment terms.

## LO4 – Explain the purpose and content of the auditor's report.

An audit as it relates to the auditor's report is an external examination of a company's financial statement information and its system of internal controls. Internal controls are the processes instituted by management of a company to direct, monitor, and measure the accomplishment of its objectives including the prevention and detection of fraud and error. The auditor's report provides some assurance that the financial statements are trustworthy. In simple terms, an unqualified auditor's report indicates that the financial statements are truthful and a qualified auditor's report is one that indicates the financial statements are not or may not be truthful.

**LO5 – Explain the purpose and content of the report that describes management's responsibility for financial statements.**

This report makes a statement describing management's responsibility for the accurate preparation and presentation of financial statements.

## Discussion Questions

Refer to the Big Dog Carworks Corp. financial statements for the year ended December 31, 2023 and other information included in this chapter to answer the following questions.

1. Identify the economic resources of Big Dog Carworks Corp. in its financial statements.
2. What comprise the financial statements of BDCC?
3. Why does BDCC prepare financial statements?
4. From the balance sheet at December 31, 2023 extract the appropriate amounts to complete the following accounting equation:

   ASSETS $=$ LIABILITIES $+$ EQUITY
5. If ASSETS $-$ LIABILITIES $=$ NET ASSETS, how much is net assets at December 31, 2023? Is net assets synonymous with equity?
6. What types of assets are reported by Big Dog Carworks Corp.? What types of liabilities?
7. What kind of assumptions is made by Big Dog Carworks Corp. about asset capitalisation? Over what periods of time are assets being amortized?
8. What adjustments might management make to the financial information when preparing the annual financial statements? Consider the following categories:

   **a.** Current asset accounts.

   **b.** Non-current asset accounts.

   **c.** Current liability accounts.

   **d.** Non-current liability accounts.

   Indicate several examples in each category. Use the BDCC balance sheet and notes 3 and 5 for ideas.
9. What are the advantages of using a classified balance sheet? Why are current accounts shown before non-current ones on BDCC's balance sheet?

10. How does Big Dog Carworks Corp. make it easier to compare information from one time period to another?

11. Who is the auditor of BDCC? What does the auditor's report tell you about BDCC's financial statements? Does it raise any concerns?

12. What does the auditor's report indicate about the application of generally accepted accounting principles in BDCC's financial statements?

13. What is BDCC management's responsibility with respect to the company's financial statements? Do the financial statements belong to management? the auditor? the board of directors? shareholders?

## Exercises

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**EXERCISE 4–1 (LO2) Classified Balance Sheet** **Watch video**

The following accounts and account balances are taken from the records of Joyes Enterprises Ltd. at December 31, 2024, its fiscal year-end.

| | *Dr.* | *Cr.* |
|---|---|---|
| Accounts Receivable | $8,000 | |
| Accounts Payable | | $7,000 |
| Accumulated Depreciation – Buildings | | 1,000 |
| Accumulated Depreciation – Equipment | | 4,000 |
| Bank Loan (due 2025) | | 5000 |
| Buildings | 25,000 | |
| Cash | 2,000 | |
| Dividends Declared | 1,000 | |
| Equipment | 20,000 | |
| Income Tax Payable | | 3,000 |
| Land | 5,000 | |
| Merchandise Inventory | 19,000 | |
| Mortgage Payable (due 2027) | | 5,000 |
| Prepaid Insurance | 1,000 | |
| Share Capital | | 48,000 |
| Retained Earnings, Jan. 1 2024 | -0- | 2,000 |
| Totals | $81,000 | $75,000 |
| Net Income | -0- | 6,000 |
| Totals | -0- | -0- |

**Required**:

**a.** Using the above information, prepare a classified balance sheet.

**b.** Does Joyes Enterprises Ltd. have sufficient resources to meet its obligations in the upcoming year?

**c.** Calculate the proportion of shareholders' to creditors' claims on the assets of Joyes.

---

**EXERCISE 4–2 (LO2,3) Classified Balance Sheet**

The following balance sheet was prepared for Abbey Limited:

Abbey Limited
Balance Sheet
As at November 30, 2023

| *Assets* | | | *Liabilities* | | |
|---|---|---|---|---|---|
| *Current* | | | *Current* | | |
| Cash | $1,000 | | Accounts Payable | $5,600 | |
| Accounts Receivable | 6,000 | | Notes Payable (due 2024) | 2,000 | |
| Building | 12,000 | | Bank Loan (due 2030) | 1,000 | |
| Merchandise Inventory | 3,000 | | Total Current Liabilities | | $8,600 |
| Total Current Assets | | $22,000 | | | |
| *Non-current* | | | *Non-current* | | |
| Short-Term Investments | 3,000 | | Mortgage Payable (due 2031) | 7,000 | |
| Equipment | 1,500 | | Retained Earnings | 1,000 | |
| Unused Office Supplies | 100 | | Salaries Payable | 250 | |
| Truck | 1,350 | | Total Non-current Liabilities | | 8,250 |
| Total Non-current Assets | | 5,950 | Total Liabilities | | 16,850 |
| | | | *Equity* | | |
| | | | Share Capital | | 11,100 |
| Total Assets | | $27,950 | Total Liabilities and Assets | | $27,950 |

**Required**:

**a.** Identify the errors that exist in the balance sheet of Abbey Limited and why you consider this information incorrect.

**b.** Prepare a corrected, classified balance sheet.

**c.** Based on the balance sheet categories, what additional information should be disclosed in the notes to the financial statements?

**EXERCISE 4–3 (LO2,3) Accounts Classifications**

Below are various accounts:

| | | | |
|---|---|---|---|
| | Land used in the normal course of business operations | | Accrued salaries payable |
| | Notes payable, due in four months | | Prepaid advertising |
| | Truck | | Advertising expense |
| | Land held for investment | | Unearned revenue |
| | Copyright | | Service revenue |
| | Accounts payable | | Cash |
| | Cash dividends | | Mortgage payable, due in fifteen years |
| | Building | | Mortgage payable, due in six months |
| | Furniture | | Share capital |
| | Accounts receivable, from customer sales | | Shop supplies |
| | Franchise | | Accumulated depreciation, building |
| | Utilities expense | | Depreciation expense |
| | Utilities payable | | Office supplies |

**Required**: Classify each account as one of the following:

1. current asset
2. long-term investment
3. property, plant and equipment
4. intangible asset
5. current liability
6. long-term liability
7. equity
8. not reported on the balance sheet

**EXERCISE 4–4 (LO2) Preparing Closing Entries, Balance Sheet and Post-closing Trial balance**

Below are the December 31, 2024, year-end accounts balances for Abled Appliance Repair Ltd. This is the business's third year of operations.

| | | | |
|---|---|---|---|
| Cash | $80,000 | Share capital | $1,000 |
| Accounts receivable | 66,000 | Retained earnings | 116,600 |
| Office supplies inventory | 2,000 | Revenue | 35,000 |
| Prepaid insurance | 5,000 | Rent expense | 3,000 |
| Land | 20,000 | Salaries expense | 8,000 |
| Office equipment | 10,000 | Utilities expense | 500 |
| Accumulated depreciation, office equipment | 2,000 | Travel expense | 1,500 |
| Accounts payable | 35,000 | Insurance expense | 600 |
| Unearned consulting fees | 10,000 | Supplies and postage expense | 3,000 |

**Required**:

**a.** Prepare the closing entries.

**b.** Prepare a classified balance sheet.

**c.** Prepare a post-closing trial balance.

**EXERCISE 4–5 (LO2) Classified Balance Sheet**

Below is the post-closing trial balance for Mystery Company Ltd. All accounts have normal balances.

Mystery Company Ltd.
Trial Balance
November 30, 2024

| | |
|---|---|
| Accounts payable | $ 95,960 |
| Accounts receivable | 99,520 |
| Accrued salaries payable | 58,580 |
| Accumulated depreciation, building | 43,530 |
| Accumulated depreciation, vehicle | 8,650 |
| Building | 270,000 |
| Cash | 150,650 |
| Copyright | 51,600 |
| Current portion of long-term debt | 72,000 |
| Income taxes payable | 32,500 |
| Interest payable | 12,000 |
| Notes payable, due 2033 | 145,000 |
| Office supplies | 1,300 |
| Prepaid insurance expense | 10,000 |
| Prepaid rent expense | 12,000 |
| Retained earnings | 74,850 |
| Share capital | ?? |
| Unearned revenue | 150,000 |
| Vehicle | 108,000 |

**Required**: Prepare a classified balance sheet.

---

**EXERCISE 4–6 (LO2) Classified Balance Sheet**

Below is the adjusted trial balance for Hitalle Heights Corp. All accounts have normal balances.

Hitalle Heights Corp.
Trial Balance
May 31, 2024

| | |
|---|---|
| Accounts payable | $ 13,020 |
| Accounts receivable | 59,808 |
| Accrued salaries and benefits payable | 4,872 |
| Accumulated depreciation, furniture | 1,792 |
| Cash | 8,888 |
| Cash dividends | 2,800 |
| Depreciation expense | 1,333 |
| Furniture | 8,400 |
| Income tax expense | 2,520 |
| Income taxes payable | 3,320 |
| Insurance expense | 2,072 |
| Interest expense | 84 |
| Interest payable | 224 |
| Land | 58,048 |
| Bank loan payable (long-term) | 16,800 |
| Shop supplies | 1,008 |
| Prepaid insurance expense | 7,162 |
| Rent expense | 12,600 |
| Travel expense | 840 |
| Retained earnings | 192,355 |
| Revenue | 94,000 |
| Salaries expense | 23,352 |
| Share capital | 840 |
| Shop supplies expense | 420 |
| Franchise | 155,868 |
| Unearned revenue | 21,000 |
| Utilities expense | 3,020 |

Additional information:

The bank loan will be reduced by $5,200 next year.

There were 200 additional shares issued during the year for $200.

**Required**: Prepare a classified balance sheet and a statement of changes in equity for May 31, 2024.

## Problems

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**PROBLEM 4–1 (LO2) Classified Balance Sheet**

The following list of accounts is taken from the records of the Norman Company Ltd. at December 31, 2023:

| *Account Title* | *Balance* |
|---|---|
| Accounts Payable | $125 |
| Accounts Receivable | 138 |
| Building | 400 |
| Cash | 250 |
| Share Capital | 400 |
| Equipment | 140 |
| Land | 115 |
| Mortgage Payable (due 2030) | 280 |
| Bank Loan, due within 90 days | 110 |
| Notes Receivable, due within 90 days | 18 |
| Prepaid Insurance | 12 |
| Retained Earnings | 214 |
| Salaries Payable | 14 |
| Unused Office Supplies | 70 |

**Required**: Prepare a classified balance sheet.

---

**PROBLEM 4–2 (LO2) Classified Balance Sheet**

The following adjusted trial balance has been extracted from the records of Dark Edge Sports Inc. at December 31, 2023, its second fiscal year-end.

| | *Account Balances* | |
|---|---|---|
| | *Dr.* | *Cr.* |
| Accounts Payable | | $8,350 |
| Accounts Receivable | $18,700 | |
| Accumulated Depreciation – Equipment | | 2,000 |
| Advertising Expense | 7,200 | |
| Bank Loan, due May 31, 2024 | | 10,000 |
| Cash | 1,500 | |
| Depreciation Expense | 1,100 | |
| Dividends | 600 | |
| Equipment | 12,500 | |
| Income Taxes Expense | 2,300 | |
| Income Taxes Payable | | 4,600 |
| Insurance Expense | 1,200 | |
| Interest and Bank Charges Expense | 1,300 | |
| Prepaid Insurance | 1,300 | |
| Prepaid Rent | 600 | |
| Retained Earnings | | 2,000 |
| Rent Expense | 17,950 | |
| Revenue | | 80,000 |
| Salaries Expense | 39,000 | |
| Share Capital | | 3,000 |
| Telephone Expense | 1,100 | |
| Utilities Expense | 3,600 | |
| Totals | $109,950 | $109,950 |

*Note: No shares were issued during 2023.*

**Required**:

1. Calculate net income for year ended December 31, 2023.
2. Prepare a statement of changes in equity for the year ended December 31, 2023.
3. Prepare a classified balance sheet at December 31, 2023.
4. By what amounts do total current liabilities exceed total current assets at December 31, 2023?
5. Assume a $5,000 bank loan is received, payable in six months. Will this improve the negative working capital situation calculated in (4) above? Calculate the effect on your answer to (4) above?
6. As the bank manager, what questions might you raise regarding the loan?

**PROBLEM 4–3 (LO2) Closing Entries and Financial Statements**

Below is the adjusted trial balance with accounts in alphabetical order for MayBee Services Ltd. All accounts have normal balances.

MayBee Services Ltd.
Trial Balance
At June 30, 2024

| | |
|---|---|
| Accounts payable | $ 32,550 |
| Accounts receivable | 149,520 |
| Accrued salaries payable | 12,180 |
| Accumulated depreciation, building | 280 |
| Accumulated depreciation, equipment | 4,480 |
| Advertising expense | 5,670 |
| Building | 145,400 |
| Cash | 122,220 |
| Cash dividends | 7,000 |
| Depreciation expense | 3,332 |
| Equipment | 21,000 |
| Income tax expense | 6,300 |
| Income taxes payable | 6,300 |
| Insurance expense | 5,180 |
| Interest expense | 210 |
| Interest payable | 210 |
| Notes payable, due 2026 | 42,000 |
| Office supplies | 2,520 |
| Prepaid insurance expense | 17,906 |
| Rent expense | 31,500 |
| Repairs expense | 10,920 |
| Retained earnings | 343,058 |
| Revenue | 135,000 |
| Salaries expense | 58,380 |
| Share capital | 2,100 |
| Shop supplies expense | 1,050 |
| Trademark | 10,000 |
| Unearned revenue | 52,500 |
| Utilities expense | 32,550 |

Additional Information: For the note payable, its account balance will be reduced by $14,000 as at June 30, 2025.

**Required**:

1. Prepare the closing entries.
2. Prepare a classified balance sheet.
3. Prepare a post-closing trial balance.

---

**PROBLEM 4–4 (LO2) Challenge Question – Closing Entries and Financial Statements**

Below is the unadjusted trial balance with accounts in alphabetical order for Jennette Ltd. All accounts have normal balances.

Jennette Ltd.
Unadjusted Trial Balance
At September 30, 2024

| | |
|---|---|
| Accounts payable | $ 39,983 |
| Accounts receivable | 321,468 |
| Accrued salaries payable | 21,909 |
| Accumulated depreciation, building | 9,632 |
| Accumulated depreciation, vehicle | 602 |
| Advertising expense | 12,191 |
| Building | 312,610 |
| Cash | 262,773 |
| Cash dividends | 15,050 |
| Copyright | 21,500 |
| Depreciation expense | 7,164 |
| Income tax expense | 13,545 |
| Income taxes payable | 13,545 |
| Insurance expense | 11,137 |
| Interest expense | 452 |
| Interest payable | 4,730 |
| Mortgage payable, due 2027 | 90,300 |
| Office supplies | 5,418 |
| Prepaid insurance expense | 8,498 |
| Rent expense | 67,725 |
| Repairs expense | 23,478 |
| Retained earnings | 737,575 |
| Revenue | 290,250 |
| Salaries expense | 155,517 |
| Share capital | 4,515 |
| Shop supplies expense | 2,259 |
| Unearned revenue | 112,875 |
| Utilities expense | 39,981 |
| Vehicle | 45,150 |

Additional information:

Adjustments not yet recorded are:

1. Revenue earned but not yet billed is $20,000.
2. Depreciation expense for the vehicle is $3,000.
3. The building's estimated residual value is $100,000 and its estimated useful life is 25 years.

4. Salaries not yet paid are $2,500.
5. Revenue that was paid in cash as an advance of $50,000 is now earned.
6. Rent for October 2024 of $5,150 was paid and recorded to rent expense.
7. One-half of the prepaid insurance is has now been used.

Mortgage payments for the next fiscal year will total $36,000, which includes interest expense of $6,000.

**Required**:

1. Update all the account balances with appropriate adjusting entries based on the six missing adjustments above. (Hint: Use a trial balance format with adjusting entry columns.)
2. Prepare an adjusted trial balance.
3. Prepare a classified balance sheet.

# Chapter 5

# Accounting for the Sale of Goods

To this point, examples of business operations have involved the sale of services. This chapter introduces business operations based on the purchase and resale of goods. For example, Canadian Tire and Walmart each purchase and resell goods — such businesses are known as merchandisers. The accounting transactions for merchandising companies differ from those of service-based businesses. Chapter 5 covers accounting for transactions of sales of goods on credit and related cash collections by merchandising firms, and transactions involving purchases and payments for goods sold in the normal course of business activities.

## Chapter 5 Learning Objectives

LO1 – Describe merchandising and explain the financial statement components of sales, cost of goods sold, merchandise inventory, and gross profit; differentiate between the perpetual and periodic inventory systems.

LO2 – Analyze and record purchase transactions for a merchandiser.

LO3 – Analyze and record sales transactions for a merchandiser.

LO4 – Record adjustments to merchandise inventory.

LO5 – Explain and prepare a classified multiple-step income statement for a merchandiser.

LO6 – Explain the closing process for a merchandiser.

LO7 – Explain and identify the entries regarding purchase and sales transactions in a periodic inventory system.

## Concept Self-Check

Use the following questions as a self-check while working through Chapter 5.

1. What is gross profit and how is it calculated?
2. How is a merchandiser different from a service company?
3. What is a perpetual inventory system?

4. How is the purchase of merchandise inventory on credit recorded in a perpetual system?
5. How is a purchase return recorded in a perpetual system?
6. What does the credit term of “1/15, n30” mean?
7. How is a purchase discount recorded in a perpetual system?
8. How is the sale of merchandise inventory on credit recorded in a perpetual system?
9. How is a sales return that is restored to inventory recorded versus a sales return that is not restored to inventory (assuming a perpetual inventory system)?
10. What is a sales discount and how is it recorded in a perpetual inventory system?
11. Why does merchandise inventory need to be adjusted at the end of the accounting period and how is this done in a perpetual inventory system?
12. What types of transactions affect merchandise inventory in a perpetual inventory system?
13. How are the closing entries for a merchandiser using a perpetual inventory system different than for a service company?
14. When reporting expenses on an income statement, how is the function of an expense reported versus the nature of an expense?
15. On a classified multiple-step income statement, what is reported under the heading ‘Other revenues and expenses’ and why?
16. What is the periodic inventory system?
17. How is cost of goods sold calculated under the periodic inventory system?

**NOTE:** The purpose of these questions is to prepare you for the concepts introduced in the chapter. Your goal should be to answer each of these questions as you read through the chapter. If, when you complete the chapter, you are unable to answer one or more the Concept Self-Check questions, go back through the content to find the answer(s). Solutions are not provided to these questions.

## 5.1 The Basics of Merchandising

LO1 – Describe merchandising and explain the financial statement components of sales, cost of goods sold, merchandise inventory, and gross profit; differentiate between the perpetual and periodic inventory systems.

A merchandising company, or merchandiser, differs in several basic ways from a company that provides services. First, a merchandiser purchases and then sells goods whereas a service company sells services. For example, a car dealership is a merchandiser that sells cars while an airline is a service company that sells air travel. Because merchandising involves the purchase and then the resale of goods, an expense called **cost of goods sold** results. Cost of goods sold is the cost of the actual goods sold. For example, the cost of goods sold for a car dealership would be the cost of the cars purchased from manufacturers and then resold to customers. A service company does not have an expense called cost of goods sold since it does not sell goods. Because a merchandiser has cost of goods sold expense and a service business does not, the income statement for a merchandiser includes different details. A merchandising income statement highlights cost of goods sold by showing the difference between sales revenue and cost of goods sold called **gross profit** or **gross margin**. The basic income statement differences between a service business and a merchandiser are illustrated in Figure 5.1.

| ***Service Company*** | ***Merchandising Company*** |
|---|---|
| Revenues | Sales |
| | *Less*: Cost of Goods Sold |
| | Equals: Gross Profit |
| *Less*: Expenses | *Less*: Expenses |
| *Equals*: Net Income | *Equals*: Net Income |

**Figure 5.1: Differences Between the Income Statements of Service and Merchandising Companies**

Assume that Excel Cars Corporation decides to go into the business of buying used vehicles from a supplier and reselling these to customers. If Excel purchases a vehicle for $3,000 and then sells it for $4,000, the gross profit would be $1,000, as follows:

| | | |
|---|---|---|
| Sales . . . . . | $ | 4,000 |
| Cost of Goods Sold | | 3,000 |
| Gross Profit . . . | $ | 1,000 |

The word "gross" is used by accountants to indicate that other expenses incurred in running the business must still be deducted from this amount before net income is calculated. In other words, gross profit represents the amount of sales revenue that remains to pay expenses after the cost of the goods sold is deducted.

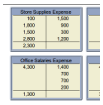
A **gross profit percentage** can be calculated to express the relationship of gross profit to sales. The sale of the vehicle that cost $3,000 results in a 25% gross profit percentage ($1,000/4,000). That is, for every $1 of sales, the company has $.25 left to cover other expenses after deducting cost of goods sold. Readers of financial statements use this percentage as a means to evaluate the performance of one company against other companies in the same industry, or in the same company from year to year. Small fluctuations in the gross profit percentage can have significant effects on the financial performance of a company because the amount of sales and cost of goods sold are often very large in comparison to other income statement items.

Another difference between a service company and a merchandiser relates to the balance sheet. A merchandiser purchases goods for resale. Goods held for resale by a merchandiser are called **merchandise inventory** and are reported as an asset on the balance sheet. A service company would not normally have merchandise inventory.

## Inventory Systems

There are two types of ways in which inventory is managed: perpetual inventory system or periodic inventory system. In a **perpetual inventory system**, the merchandise inventory account and cost of goods sold account are updated immediately when transactions occur. In a perpetual system, as merchandise inventory is purchased, it is debited to the merchandise inventory account. As inventory is sold to customers, the cost of the inventory sold is removed from the merchandise inventory account and debited to the cost of goods sold account. A perpetual system means that account balances are known on a real-time basis. This chapter focuses on the perpetual system.

Some businesses still use a **periodic inventory system** in which the purchase of merchandise inventory is debited to a temporary account called Purchases. At the end of the accounting period, inventory is counted (known as a **physical count)** and the merchandise inventory account is updated and cost of goods sold is calculated. In a periodic inventory system, the real-time balances in merchandise inventory and cost of goods sold are not known. It should be noted that even in a perpetual system a physical count must be performed at the end of the accounting period to record differences between the actual inventory on hand and the account balance. The entry to record this difference is discussed later in this chapter. The periodic system is discussed in greater detail in the appendix to this chapter.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Using the Information – Gross Profit Ratio.

## 5.2 The Purchase and Payment of Merchandise Inventory (Perpetual)

LO2 – Analyze and record purchase transactions for a merchandiser.

As introduced in Chapter 3, a company's operating cycle includes purchases *on account* or *on credit* and is highlighted in Figure 5.2.

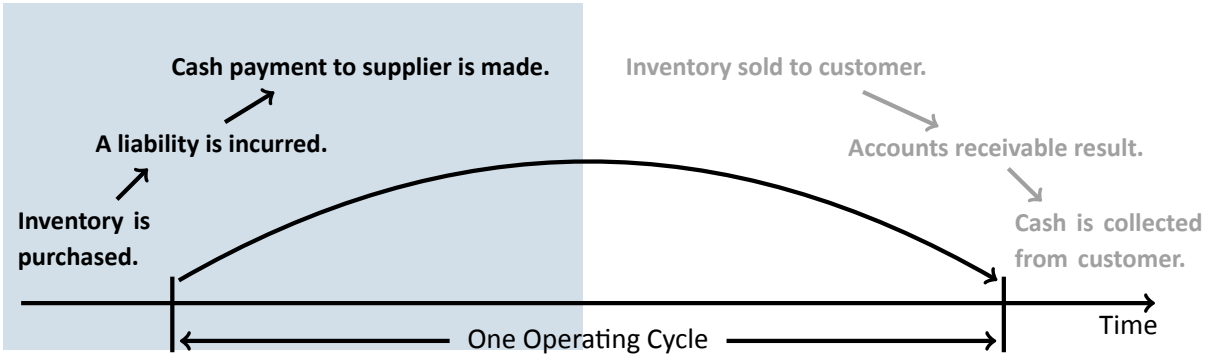



**Figure 5.2: Purchase and Payment Portion of the Operating Cycle**

### Recording the Purchase of Merchandise Inventory (Perpetual)

When merchandise inventory is purchased, the cost is recorded in a Merchandise Inventory general ledger account. An account payable results when the merchandise inventory is acquired but will not be paid in cash until a later date. For example, recall the vehicle purchased on account by Excel for $3,000. The journal entry and general ledger T-account effects would be as follows.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Merchandise Inventory . . . . . | | 3,000 | |
| | Accounts Payable . . . . . | | | 3,000 |
| | To record the purchase of merchandise inventory on account. | | | |

In addition to the purchase of merchandise inventory, there are other activities that affect the Merchandise Inventory account. For instance, merchandise may occasionally be returned to a

supplier or damaged in transit, or discounts may be earned for prompt cash payment. These transactions result in the reduction of amounts due to the supplier and the costs of inventory. The purchase of merchandise inventory may also involve the payment of transportation and handling costs. These are all costs necessary to prepare inventory for sale, and all such costs are included in the Merchandise Inventory account. These costs are discussed in the following sections.

## Purchase Returns and Allowances (Perpetual)

Assume that the vehicle purchased by Excel turned out to be the wrong colour. The supplier was contacted and agreed to reduce the price by $300 to $2,700. This is an example of a **purchase returns and allowances** adjustment. The amount of the allowance, or reduction, is recorded as a credit to the Merchandise Inventory account, as follows:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Accounts Payable ..... | | 300 | |
| | Merchandise Inventory..... | | | 300 |
| | To record purchase allowance; incorrect colour. | | | |

Note that the cost of the vehicle has been reduced to $2,700 ($3,000 – 300) as has the amount owing to the supplier. Again, the perpetual inventory system records changes in the Merchandise Inventory account each time a relevant transaction occurs.

## Purchase Discounts (Perpetual)

**Purchase discounts** affect the purchase price of merchandise if payment is made within a time period specified in the supplier's invoice. For example, if the terms on the $3,000 invoice for one vehicle received by Excel indicates "1/15, n45", this means that the $3,000 must be paid within 45 days ('n' = net). However, if cash payment is made by Excel within 15 days, the purchase price will be reduced by 1%.

Assuming the amount is paid within 15 days, the supplier's terms entitle Excel to deduct $27 [($3,000 - $300) = $2,700 x 1% = $27]. The payment to the supplier would be recorded as:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Accounts Payable ..... | | 2,700 | |
| | Merchandise Inventory..... | | | 27 |
| | Cash..... | | | 2,673 |
| | To record payment on account within the discount period. | | | |

The cost of the vehicle in Excel's inventory records is now $2,673 ($3,000 – 300 – 27). If payment is made after the discount period, $2,700 of cash is paid and the entry would be:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Accounts Payable<br>Cash<br>To record payment of account; no purchase discount applied. | | 2,700 | 2,700 |

*Trade discounts* are similar to purchase discounts. A supplier advertises a **list price** which is the normal selling price of its goods to merchandisers. **Trade discounts** are given by suppliers to merchandisers that buy a large quantity of goods. For instance, assume a supplier offers a 10% trade discount on purchases of 1,000 units or more where the list price is $1/unit. If Beta Merchandiser Corp. buys 1,000 units on account, the entry in Beta's records would be:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Merchandise Inventory<br>Accounts Payable<br>To record purchase on account; 10% trade discount ($1,000 – 10% = $900). | | 900 | 900 |

Note that the net amount (list price less trade discount) is recorded.

## Transportation

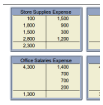
Costs to transport goods from the supplier to the seller must also be considered when recording the cost of merchandise inventory. The shipping terms on the invoice identify the point at which ownership of the inventory transfers from the supplier to the purchaser. When the terms are **FOB shipping point**, ownership transfers at the 'shipping point' so the purchaser is responsible for transportation costs. **FOB destination** indicates that ownership transfers at the 'destination point' so the seller is responsible for transportation costs. FOB is the abbreviation for "free on board."

Assume that Excel's supplier sells with terms of FOB shipping point indicating that transportation costs are Excel's responsibility. If the cost of shipping is $125 and this amount was paid in cash to the truck driver at time of delivery, the entry would be:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Merchandise Inventory<br>Cash<br>To record shipping costs on inventory purchased. | | 125 | 125 |

The cost of the vehicle in the Excel Merchandise Inventory account is now $2,798 (calculated as $3,000 original cost - $300 allowance - $27 discount + $125 shipping). It is important to note that later when Excel sells vehicles to customers, its transportation costs to deliver goods to customers are recorded as delivery expenses and do not affect the Merchandise Inventory account. In other words, delivery expenses TO customers are a SELLING cost for the seller (Excel) and are to be expensed.

The next section describes how the sale of merchandise is recorded as well as the related costs of items sold.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Purchases.

## 5.3 Merchandise Inventory: Sales and Collection (Perpetual)

LO3 – Analyze and record sales transactions for a merchandiser.

In addition to purchases on account, a merchandising company's operating cycle includes the sale of merchandise inventory *on account* or *on credit* as highlighted in Figure 5.3.

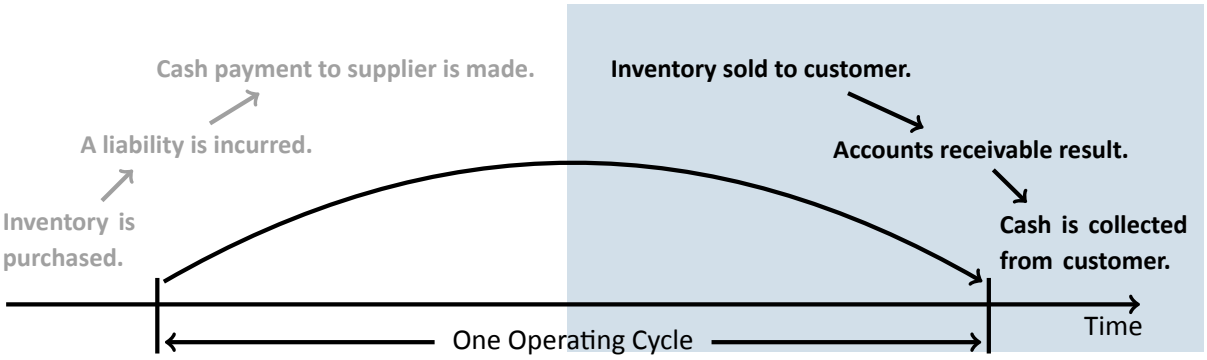



**Figure 5.3: Sales and Collection Portion of the Operating Cycle**

There are some slight recording differences when revenue is earned in a merchandising company. These are discussed below.

### Recording the Sale of Merchandise Inventory (Perpetual)

The sale of merchandise inventory is recorded with two entries:

1. recording the sale by debiting Cash or Accounts Receivable and crediting Sales, and
2. recording the cost of the sale by debiting Cost of Goods Sold and crediting Merchandise Inventory.

Assume the vehicle purchased by Excel is sold for $4,000 on account. Recall that the cost of this vehicle in the Excel Merchandise Inventory account is $2,798, as shown below.

The entries to record the sale of the merchandise inventory are:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Accounts Receivable . . . . . | | 4,000 | |
| | Sales . . . . . | | | 4,000 |
| | To record the sale of merchandise on account. | | | |

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Cost of Goods Sold . . . . . | | 2,798 | |
| | Merchandise Inventory . . . . . | | | 2,798 |
| | To record the cost of the sale. | | | |

The first entry records the sales revenue. The second entry is required to reduce the Merchandise Inventory account and transfer the cost of the inventory sold to the Cost of Goods Sold account. The second entry ensures that both the Merchandise Inventory account and Cost of Goods Sold account are up to date.

## Sales Returns and Allowances

When merchandise inventory that has been sold is returned to the merchandiser by the customer, a **sales return and allowance** is recorded. For example, assume some damage occurs to the merchandise inventory sold by Excel while it is being delivered to the customer. Excel gives the customer a *sales allowance* by agreeing to reduce the amount owing by $100. The entry is:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Sales Returns and Allowances . . . . . | | 100 | |
| | Accounts Receivable . . . . . | | | 100 |
| | To record allowance for damage to merchandise inventory during delivery. | | | |

Accounts receivable is credited because the original sale was made on account and has not yet been paid. The amount owing from the customer is reduced to $3,900. If the $3,900 had already

been paid, a credit would be made to Cash and $100 refunded to the customer. The Sales Returns and Allowances account is a contra revenue account and is therefore ***deducted*** from Sales when preparing the income statement.

If goods are returned by a customer, a *sales return* occurs. The related sales and cost of goods sold recorded on the income statement are reversed and the goods are returned to inventory. For example, assume Max Corporation sells a plastic container for $3 that it purchased for $1. The dual entry at the time of sale would be:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Accounts Receivable . . . . . | | 3 | |
| | Sales . . . . . | | | 3 |
| | To record sale on credit. | | | |

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Cost of Goods Sold . . . . . | | 1 | |
| | Merchandise Inventory . . . . . | | | 1 |
| | To record the cost of the sale. | | | |

If the customer returns the container and the merchandise is restored to inventory, the dual journal entry would be:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Sales Returns and Allowances . . . . . | | 3 | |
| | Accounts Receivable . . . . . | | | 3 |
| | To record sales return. | | | |

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Merchandise Inventory . . . . . | | 1 | |
| | Cost of Goods Sold . . . . . | | | 1 |
| | To record sales return being restored to inventory. | | | |

The use of a contra account to record sales returns and allowances permits management to track the amount of returned and damaged items.

## Sales Discounts

Another contra revenue account, **Sales Discounts**, records reductions in sales amounts when a customer pays within a certain time period. For example, assume Excel Cars Corporation offers

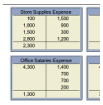
sales terms of "2/10, n30." This means that the amount owed must be paid by the customer within 30 days ('n' = net); however, if the customer chooses to pay within 10 days, a 2% discount may be deducted from the amount owing.

Consider the sale of the vehicle for $3,900 ($4,000 less the $100 allowance for damage). Payment within 10 days entitles the customer to a $78 discount ($3,900 x 2% = $78). If payment is made within the discount period, Excel receives $3,822 cash ($3,900 - 78) and prepares the following entry:

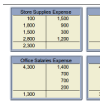
| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Cash | | 3,822 | |
| | Sales Discounts | | 78 | |
| | Accounts Receivable | | | 3,900 |
| | To record payment on account and sales discount applied. | | | |

This entry reduces the accounts receivable amount to zero which is the desired result. If payment is not made within the discount period, the customer pays the full amount owing of $3,900.

As was the case for Sales Returns and Allowances, the balance in the Sales Discounts account is deducted from Sales on the income statement to arrive at Net Sales. Merchandisers often report only the net sales amount on the income statement. Details from sales returns and allowances, and sales discounts, are often omitted because they are immaterial in amount relative to total sales. However, as already stated, separate general ledger accounts for each of sales returns and allowances, and sales discounts, are useful in helping management identify potential problems that require investigation.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Gross Profit.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Sales.

## 5.4 Adjustments to Merchandise Inventory (Perpetual)

LO4 – Record adjustments to merchandise inventory.

To verify that the actual amount of merchandise inventory on hand is consistent with the balance recorded in the accounting records, a physical inventory count must be performed at the end of the accounting period. When a physical count of inventory is

conducted, the costs attached to these inventory items are totalled. This total is compared to the Merchandise Inventory account balance in the general ledger. Any discrepancy is called **shrinkage**. Theft and deterioration of merchandise inventory are the most common causes of shrinkage.

The adjusting entry to record shrinkage is:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Cost of Goods Sold . . . . . | | XX | |
| | Merchandise Inventory . . . . . | | | XX |
| | To adjust for shrinkage. | | | |

## Summary of Merchandising Transactions

As the preceding sections have illustrated, there are a number of entries which are unique to a merchandiser. These are summarized below (assume all transactions were on account):

**(a) To record the purchase of merchandise inventory from a supplier:**

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Merchandise Inventory . . . . . | | XX | |
| | Accounts Payable . . . . . | | | XX |

**(b) To record purchase return and allowances:**

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Accounts Payable . . . . . | | XX | |
| | Merchandise Inventory . . . . . | | | XX |

**(c) To record purchase discounts:**

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Accounts Payable . . . . . | | XX | |
| | Merchandise Inventory . . . . . | | | XX |

**(d) To record shipping costs from supplier to merchandiser:**

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Merchandise Inventory . . . . . | | XX | |
| | Accounts Payable . . . . . | | | XX |

**(e) To record sale of merchandise inventory and cost of the sale:**

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Accounts Receivable . . . . . | | XX | |
| | Sales . . . . . | | | XX |

AND

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Cost of Goods Sold . . . . . | | XX | |
| | Merchandise Inventory . . . . . | | | XX |

**(f) To record sales returns restored to inventory:**

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Sales Returns and Allowances . . . . . | | XX | |
| | Accounts Receivable . . . . . | | | XX |

AND

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Merchandise Inventory . . . . . | | XX | |
| | Cost of Goods Sold . . . . . | | | XX |

**(g) To record sales returns and allowances (where returns are not restored to inventory):**

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Sales Returns and Allowances . . . . . | | XX | |
| | Accounts Receivable . . . . . | | | XX |

**(h) To record discounts:**

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Sales Discounts . . . . . | | XX | |
| | Cash . . . . . | | XX | |
| | Accounts Receivable . . . . . | | | XX |

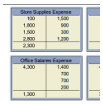
**(i) To record adjustment for shrinkage at the end of the accounting period:**

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Cost of Goods Sold . . . . . | | XX | |
| | Merchandise Inventory . . . . . | | | XX |

The effect of these transactions on each of merchandise inventory and cost of goods sold is depicted below:

| Merchandise Inventory (MI) | |
|---|---|
| (a) Purchase of MI | (b) Purchase Ret. & Allow. |
| (d) Shipping Costs | (c) Purchase Discounts |
| (f) Sales Return (when restored to inventory) | (e) Sale of MI |
| | (i) Shrinkage Adjustment |
| Adjusted Balance Reported on the Balance Sheet | |

| Cost of Goods Sold (COGS) | |
|---|---|
| (e) Cost of MI Sold | (f) Cost of sales returns restored to inventory |
| (i) Shrinkage Adjustment | |
| Adjusted Balance Reported on the Income Statement | |



An exploration is available on the Lyryx site. Log into your Lyryx course to run Merchandising Adjusting Entry.

## 5.5 Merchandising Income Statement

LO5 – Explain and prepare a classified multiple-step income statement for a merchandiser.

Businesses are required to show expenses on the income statement based on either the *nature* or the *function* of the expense. The **nature of an expense** is determined by its basic characteristics (what it is). For example, when expenses are listed on the income statement as interest, depreciation, income tax, or wages, this identifies the nature of each expense. In contrast, the **function of an expense** describes the grouping of expenses based on their purpose (what they relate to). For example, an income statement that shows cost of goods sold, selling expenses, and general and administrative expenses has grouped expenses by their function. When expenses are grouped by function, additional information must be disclosed to show the nature of expenses within each group. The **full disclosure principle** is the generally accepted accounting principle that requires financial statements to report all relevant information about the operations and financial position of the entity. Information that is relevant but not included in the body of the statements is provided in the notes to the financial statements.

A merchandising income statement can be prepared in different formats. For this course, only one format will be introduced — the classified multiple-step format. This format is generally used for internal reporting because of the detail it includes. An example of a classified multiple-step income statement is shown below using assumed data for XYZ Inc. for its month ended December 31, 2023.

XYZ Inc.
Income Statement
Month Ended December 31, 2023

| | | | |
|---|---|---|---|
| Sales | | | $100,000 |
| Less: Sales discounts | | $1,000 | |
| Sales returns and allowances | | 500 | 1,500 |
| Net sales | | | $98,500 |
| Cost of goods sold | | | 50,000 |
| Gross profit from sales | | | $48,500 |
| Operating expenses: | | | |
| Selling expenses: | | | |
| Sales salaries expense | $11,000 | | |
| Rent expense, selling space | 9,000 | | |
| Advertising expense | 5,000 | | |
| Depreciation expense, store equipment | 3,000 | | |
| Total selling expenses | | $28,000 | |
| General and administrative expenses: | | | |
| Office salaries expense | $9,000 | | |
| Rent expense, office space | 3,000 | | |
| Office supplies expense | 1,500 | | |
| Depreciation expense, office equipment | 1,000 | | |
| Insurance expense | 1,000 | | |
| Total general and administrative expenses | | 15,500 | |
| Total operating expenses | | | 43,500 |
| Income from operations | | | $5,000 |
| Other revenues and expenses: | | | |
| Rent revenue | | $12,000 | |
| Interest expense | | 1,500 | 10,500 |
| Income before tax | | | $15,500 |
| Income tax expense | | | 3,000 |
| Net income | | | $12,500 |

Notice that the classified multiple-step income statement shows expenses by both function and nature. The broad categories that show expenses by function include operating expenses, selling expenses, and general and administrative expenses. Within each category, the nature of expenses is disclosed including sales salaries, advertising, depreciation, supplies, and insurance. Notice that Rent Expense has been divided between two groupings because it applies to more than one category or function.

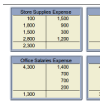
The normal operating activity for XYZ Inc. is merchandising. Revenues and expenses that are not part of normal operating activities are listed under Other Revenues and Expenses. XYZ Inc. shows Rent Revenue under Other Revenues and Expenses because this type of revenue is not part of its merchandising operations. Interest earned, dividends earned, and gains on the sale of property, plant, and equipment are other examples of revenues not related to merchandising operations. XYZ Inc. deducts Interest Expense under Other Revenues and Expenses. Interest expense does not result from operating activities; it is a financing activity because it is associated with the borrowing of money. Another example of a non-operating expense is losses on the sale of property, plant, and equipment. Income tax expense is a government requirement so it is shown separately. Notice that income tax expense follows the subtotal 'Income before tax'.

## 5.6 Closing Entries for a Merchandiser

LO6 – Explain the closing process for a merchandiser.

The process of recording closing entries for service companies was illustrated in Chapter 3. The closing procedure for merchandising companies is the same as for service companies — all income statement accounts are transferred to the Income Summary account, the Income Summary is closed to Retained Earnings, and Dividends are closed to Retained Earnings.

When preparing closing entries for a merchandiser, the income statement accounts unique for merchandisers need to be considered — Sales, Sales Discounts, Sales Returns and Allowances, and Cost of Goods Sold. Sales is a revenue account so has a normal credit balance. To close Sales, it must be debited with a corresponding credit to the income summary. Sales Discounts and Sales Returns and Allowances are both contra revenue accounts so each has a normal debit balance. Cost of Goods Sold has a normal debit balance because it is an expense. To close these debit balance accounts, a credit is required with a corresponding debit to the income summary.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Closing Entries.

## 5.7 Appendix A: The Periodic Inventory System

LO7 – Explain and identify the entries regarding purchase and sales transactions in a periodic inventory system.

The perpetual inventory system maintains a continuous, real-time balance in both Merchandise Inventory, a balance sheet account, and Cost of Goods Sold, an income statement account. As a result, the Merchandise inventory general ledger account balance should always equal the value of physical inventory on hand at any point in time. Additionally, the Cost of Goods Sold general ledger account balance should always equal the total cost of merchandise inventory sold for the accounting period. The accounts should perpetually agree; hence the name. An alternate system is considered below, called the *periodic* inventory system.

### Description of the Periodic Inventory System

The periodic inventory system does not maintain a constantly-updated merchandise inventory balance. Instead, ending inventory is determined by a physical count and valued at the end of an accounting period. The change in inventory is recorded only periodically. Additionally, a Cost of

Goods Sold account is not maintained in a periodic system. Instead, cost of goods sold is calculated at the end of the accounting period.

When goods are purchased using the periodic inventory system, the cost of merchandise is recorded in a **Purchases** account in the general ledger, rather than in the Merchandise Inventory account as is done under the perpetual inventory system. The Purchases account is an income statement account that accumulates the cost of merchandise acquired for resale.

The journal entry, assuming a purchase of merchandise on credit, is:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Purchases . . . . . | | XX | |
| | Accounts Payable . . . . . | | | XX |

## Purchase Returns and Allowances (Periodic)

Under the periodic inventory system, any purchase returns or purchase allowances are accumulated in a separate account called **Purchase Returns and Allowances**, an income statement account, and recorded as:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Accounts Payable . . . . . | | XX | |
| | Purchase Returns and Allowances . . . . | | | XX |

Purchase Returns and Allowances is a contra expense account and the balance is deducted from Purchases when calculating cost of goods sold on the income statement.

## Purchase Discounts (Periodic)

Another contra expense account, **Purchase Discounts**, accumulates reductions in the purchase price of merchandise if payment is made within a time period specified in the supplier's invoice and recorded as:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Accounts Payable . . . . . | | XX | |
| | Purchase Discounts . . . . . | | | XX |

## Transportation (Periodic)

Under the periodic inventory system, an income statement account called **Transportation-in** is used to accumulate transportation or freight charges on merchandise purchased for resale. The Transportation-in account is used in calculating the cost of goods sold on the income statement. It is recorded as:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Transportation-In . . . . . | | XX | |
| | Cash or Accounts Payable . . . . . | | | XX |

At the end of the accounting period, cost of goods sold must be calculated which requires that the balance in Merchandise Inventory be determined. To determine the end of the period balance in Merchandise Inventory, a physical count of inventory is performed. The total value of the inventory as identified by the physical count becomes the ending balance in Merchandise Inventory. Cost of goods sold can then be calculated as follows:

| | |
|---|---|
| Beginning Balance of Merchandise Inventory . . | XX |
| Plus: Net Cost of Goods Purchased* . . . . . | XX |
| Less: Ending Balance of Merchandise Inventory | XX |
| Equals: Cost of Goods Sold . . . . . | XX |

*Net Cost of Goods Purchased is calculated as:

| | |
|---|---|
| Purchases . . . . . | XX |
| Less: Purchase Returns and Allowances . . | XX |
| Less: Purchase Discounts . . . . . | XX |
| Equals: Net Purchases . . . . . | XX |
| Add: Transportation-In . . . . . | XX |
| Equals: Net Cost of Goods Purchased . . . . | XX |

## Closing Entries (Periodic)

In the perpetual inventory system, the Merchandise Inventory account is continuously updated and is adjusted at the end of the accounting period based on a physical inventory count. In the periodic inventory system, the balance in Merchandise Inventory does not change during the accounting period. As a result, at the end of the accounting period, the balance in Merchandise Inventory in a periodic system is the beginning balance. In order for the Merchandise Inventory account to reflect the ending balance as determined by the physical inventory count, the beginning inventory balance must be removed by crediting Merchandise Inventory, and the ending inventory balance entered by debiting it. This is accomplished as part of the closing process. Closing

entries for a merchandiser that uses a periodic inventory system are illustrated below using the adjusted trial balance information for Norva Inc.

Norva Inc.
Adjusted Trial Balance
At December 31, 2023

| | Debits | Credits |
|---|---|---|
| Cash | $15,000 | |
| Merchandise inventory | 1,000 | |
| Accounts payable | | $ 5,000 |
| Common shares | | 8,000 |
| Dividends | 500 | |
| Retained earnings | | 3,500 |
| Sales | | 13,400 |
| Sales discounts | 200 | |
| Purchases | 5,000 | |
| Purchase returns & allowances | | 800 |
| Salaries expense | 7,000 | |
| Advertising expense | 2,000 | |
| Totals | $30,700 | $30,700 |

Other information: The ending balance in merchandise inventory is $2,000 based on a physical count.

Step 1: Close debit balance income statement accounts plus beginning merchandise inventory:

| | | |
|---|---|---|
| Income Summary | 15,200 | |
| Merchandise Inventory | | 1,000 |
| Sales Discounts | | 200 |
| Purchases | | 5,000 |
| Salaries Expense | | 7,000 |
| Advertising Expense | | 2,000 |

Step 2: Close credit balance income statement accounts plus ending merchandise inventory:

| | | |
|---|---|---|
| Merchandise Inventory | 2,000 | |
| Sales | 13,400 | |
| Purchase Returns & Allowances | 800 | |
| Income Summary | | 16,200 |

Step 3: Close income summary to retained earnings:

| | | |
|---|---|---|
| Income Summary | 1,000 | |
| Retained Earnings | | 1,000 |

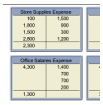
Step 4: Close dividends to retained earnings:

| | | |
|---|---|---|
| Retained Earnings | 500 | |
| Dividends | | 500 |

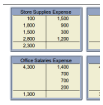
When the closing entries above are posted and a post-closing trial balance prepared as shown below, notice that the Merchandise Inventory account reflects the correct balance based on the physical inventory count.

Norva Inc.
Post-Closing Trial Balance
At December 31, 2023

| | Debits | Credits |
|---|---|---|
| Cash | $15,000 | |
| Merchandise inventory | 2,000 | |
| Accounts payable | | $ 5,000 |
| Common shares | | 8,000 |
| Retained earnings | | 4,000 |
| Totals | $17,000 | $17,000 |



An exploration is available on the Lyryx site. Log into your Lyryx course to run Journalizing Merchandise Transactions.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Income Statement and Closing Entries.

## Summary of Chapter 5 Learning Objectives

### LO1 – Describe merchandising and explain the financial statement components of sales, cost of goods sold, merchandise inventory, and gross profit; differentiate between the perpetual and periodic inventory systems.

Merchandisers buy and resell products. Merchandise inventory, an asset, is purchased from suppliers and resold to customers to generate sales revenue. The cost of the merchandise inventory sold is an expense called cost of goods sold. The profit realized on the sale of merchandise inventory before considering any other expenses is called gross profit. Gross profit may be expressed as a dollar amount or as a percentage. To track merchandise inventory and cost of goods sold in real time, a perpetual inventory system is used; the balance in each of Merchandise Inventory and Cost of Goods Sold is always up-to-date. In a periodic inventory system, a physical count of the inventory must be performed in order to determine the balance in Merchandise Inventory and Cost of Goods Sold.

### LO2 – Analyze and record purchase transactions for a merchandiser.

In a perpetual inventory system, a merchandiser debits Merchandise Inventory regarding the purchase of merchandise for resale from a supplier. Any purchase returns and allowances or purchase discounts are credited to Merchandise Inventory as they occur to keep the accounts up-to-date.

### LO3 – Analyze and record sales transactions for a merchandiser.

In a perpetual inventory system, a merchandiser records two entries at the time of sale: one to record the sale and a second to record the cost of the sale. Sales returns that are returned to inventory also require two entries: one to reverse the sale by debiting a sales returns and allowances account and a second to restore the merchandise to inventory by debiting Merchandise Inventory and crediting Cost of Goods Sold. Sales returns not restored to inventory as well as sales allowances are recorded with one entry: debit sales returns and allowances and credit cash or accounts receivable. Sales discounts are recorded when a credit customer submits their payment within the discount period specified.

### LO4 – Record adjustments to merchandise inventory.

A physical count of merchandise inventory is performed and the total compared to the general ledger balance of Merchandise Inventory. Discrepancies are recorded as an adjusting entry that debits cost of goods sold and credits Merchandise Inventory.

### LO5 – Explain and prepare a classified multiple-step income statement for a merchandiser.

A classified multiple-step income statement for a merchandiser is for internal use because of the detail provided. Sales, less sales returns and allowances and sales discounts, results in net sales. Net sales less cost of goods sold equals gross profit. Expenses are shown based on both their function and nature. The functional or group headings are: operating expenses, selling expenses, and general and administrative expenses. Within each grouping, the nature of expenses is detailed including: depreciation, salaries, advertising, wages, and insurance. A specific expense can be divided between groupings.

### LO6 – Explain the closing process for a merchandiser.

The steps in preparing closing entries for a merchandiser are the same as for a service company. The difference is that a merchandiser will need to close income statement accounts unique to merchandising such as: Sales, Sales Returns and Allowances, Sales Discounts, and Cost of Goods Sold.

### LO7 – Explain and identify the entries regarding purchase and sales transactions in a periodic inventory system.

A periodic inventory system maintains a Merchandise Inventory account but does not have a Cost of Goods Sold account. The Merchandise Inventory account is updated at the end of the accounting period as a result of a physical inventory count. Because a merchandiser using a period system does not use a Merchandise Inventory account to record purchase or sales transactions during the accounting period, it maintains accounts that are different than under a perpetual system, namely, Purchases, Purchase Returns and Allowances, Purchase Discounts, and Transportation-in.

## Discussion Questions

1. How does the income statement prepared for a company that sells goods differ from that prepared for a service business?
2. How is gross profit calculated? What relationships do the gross profit and gross profit percentage calculations express? Explain, using an example.
3. What are some common types of transactions that are recorded in the merchandise Inventory account?
4. Contrast and explain the sales and collection cycle and the purchase and payment cycle.
5. What contra accounts are used in conjunction with sales? What are their functions?
6. (Appendix) Compare the perpetual and periodic inventory systems. What are some advantages of each?

## Exercises

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**EXERCISE 5–1 (LO1)**

Consider the following information of Jones Corporation over four years:

| | *2024* | *2023* | *2022* | *2021* |
|---|---|---|---|---|
| Sales | $10,000 | $9,000 | $ ? | $7,000 |
| Cost of Goods Sold | ? | 6,840 | 6,160 | ? |
| Gross Profit | 2,500 | ? | 1,840 | ? |
| Gross Profit Percentage | ? | ? | ? | 22% |

**Required**:

**a.** Calculate the missing amounts for each year.

**b.** What does this information indicate about the company?

---

**EXERCISE 5–2 (LO2)**

Reber Corp. uses the perpetual inventory system. Its transactions during July 2023 are as follows:

July 6 Purchased $600 of merchandise on account from Hobson Corporation for terms 1/10, net 30.
9 Returned $200 of defective merchandise.
15 Paid the amount owing to Hobson.

**Required**: Prepare journal entries to record the above transactions for Reber Corp.

---

**EXERCISE 5–3 (LO2,3,4)** Watch video

Horne Inc. and Sperling Renovations Ltd. both sell goods and use the perpetual inventory system. Horne Inc. had $3,000 of merchandise inventory at the start of its fiscal year, January 1, 2023. During the 2023, Horne Inc. had the following transactions:

May 5 Horne sold $4,000 of merchandise on account to Sperling Renovations Ltd., terms 2/10, net 30. Cost of merchandise to Horne from its supplier was $2,500.
7 Sperling returned $500 of merchandise received in error which Horne returned to inventory; Horne issued a credit memo. Cost of merchandise to Horne was $300.
15 Horne received the amount due from Sperling Renovations Ltd.

A physical count and valuation of Horne's Merchandise Inventory at May 31, the fiscal year-end, showed $700 of goods on hand.

**Required**: Prepare journal entries to record the above transactions and adjustment:

**a.** In the records of Horne Inc.

**b.** In the records of Sperling Renovations Ltd.

---

**EXERCISE 5–4 (LO2,3) Recording Purchase and Sales Transactions**

Below are transactions for March, 2023 for AngieJ Ltd.:

| | |
|---|---|
| March 1 | Purchased $25,000 of merchandise on account for terms 2/10, n30. |
| March 3 | Sold merchandise to a customer for $5,000 for terms 1/10, n30. (Cost $2,600) |
| March 4 | Customer from March 3 returned $200 of some unsuitable goods which were returned to inventory. (Cost $100) |
| March 5 | Purchased $15,000 of merchandise from a supplier for cash and arranged for shipping, fob shipping point. |
| March 6 | Paid $200 for shipping on the March 5 purchase. |
| March 7 | Contacted the supplier from March 5 regarding $2,000 of merchandise with some minor damages. Supplier agreed to reduce the price and offered an allowance of $500 cash, which was accepted. |
| March 8 | Sold $25,000 of merchandise for terms 1.5/10, n30. (Cost $13,000). Agreed to pay shipping costs for the goods sold to the customer. |
| March 9 | Shipped the goods sold on March 8 to customer, fob destination for $500 cash. (Hint: Shipping costs paid to ship merchandise sold to a customer is an operating expense.) |
| March 11 | Paid for fifty percent of the March 1 purchase to the supplier. |
| March 13 | Collected the account owing from the customer from March 3. |
| March 15 | Purchased office supplies on account for $540 for terms 1/10, n30. |
| March 18 | Ordered merchandise inventory from a supplier totalling $15,000. Goods to be shipped on April 10, fob shipping point. |
| March 20 | Collected $6,010 cash from an account owing from two months ago. The early payment discount had expired. |
| March 25 | Paid for the March 15 purchase. |
| March 27 | Sold $12,500 of merchandise inventory for cash (Cost $5,000). |
| March 31 | Paid the remaining of the amount owing from the March 1 purchase. |

**Required**: Prepare the journal entries, if any, for AngieJ Ltd.

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**EXERCISE 5–5 (LO2,3) Recording Purchase and Sales Transactions**

Below are the April, 2023 sales for Beautort Corp.

| | |
|---|---|
| April 1 | Purchased $15,000 of merchandise for cash. |
| April 3 | Sold merchandise to a customer for $8,000 cash. (Cost $4,600) |
| April 5 | Purchased $10,000 of merchandise from a supplier for terms 1/10, n30. |
| April 7 | Returned $2,000 of damaged merchandise inventory from April 5 back to the supplier. Supplier will repair the items and return them to their own inventory. |
| April 8 | Sold $8,000 of merchandise for terms 2/10, n30. (Cost $4,000). Agreed to pay shipping costs for the goods sold to the customer. |
| April 9 | Shipped the goods sold on April 8 to customer, fob shipping point for $500 cash. (Hint: Shipping costs paid to ship merchandise sold to a customer is not an inventory cost.) |
| April 10 | Customer from April 3 returned $1,000 of unsuitable goods which were returned to inventory. (Cost $400). Amount paid was refunded. |
| April 10 | Agreed to give customer from April 8 sale a sales allowance of $200. |
| April 12 | Purchased inventory on account for $22,000 for terms 1/10, n30. |
| April 15 | Paid amount owing for purchases on April 5. |
| April 16 | Paid $600 for shipping on the April 12 purchase. |
| April 18 | Collected $5,000 cash, net of discount, for the customer account owing from April 8. |
| April 27 | Paid for the April 12 purchase. |
| April 27 | Sold $20,000 of merchandise inventory for cash (Cost $10,000). |

**Required**: Prepare the journal entries, if any, for Beautort Corp. Round final entry amounts to the nearest whole dollar.

---

**EXERCISE 5–6 (LO5)** **Watch video**

The following information is taken from the records of Smith Corp. for the year ended June 30, 2023:

| | |
|---|---|
| Advertising Expense | $ 1,500 |
| Commissions Expense | 4,000 |
| Cost of Goods Sold | 50,000 |
| Delivery Expense | 500 |
| Depreciation Expense – Equipment | 500 |
| Insurance Expense | 1,000 |
| Office Salaries Expense | 3,000 |
| Rent Expense – Office | 1,000 |
| Rent Expense – Store | 1,500 |
| Sales Salaries Expense | 2,000 |
| Sales | 72,000 |
| Sales Returns and Allowances | 2,000 |

**Required**:

**a.** Prepare a classified multi-step income statement for the year ended June 30, 2023. Assume an income tax rate of 20%.

**b.** Compute the gross profit percentage, rounding to two decimal places.

---

**EXERCISE 5–7 (LO4) Calculating Inventory and Cost of Goods Sold**

Below is a table that contains two important calculations that link together to determine net income/(loss):

| | | | | | |
|---|---|---|---|---|---|
| Inventory, opening balance | $ 10,000 | $ 53,000 | ? | 168,540 | 50,562 |
| Plus: purchases | 30,000 | ? | 1,685,400 | ? | ? |
| Total goods available for sale | ? | 212,000 | 2,247,200 | ? | 657,306 |
| Less: ending inventory | 15,000 | ? | 842,700 | 556,180 | 100,000 |
| Cost of goods sold | ? | 132,500 | ? | ? | ? |
| | | | | | |
| Sales | ? | 240,000 | 1,600,000 | 900,000 | ? |
| Less: cost of goods sold | ? | ? | ? | ? | ? |
| Gross profit | 30,000 | ? | ? | 276,400 | 142,694 |
| Less: operating expenses | 12,000 | ? | 275,000 | ? | ? |
| Net income/(loss) | ? | 43,900 | ? | 26,400 | (2,306) |
| Gross profit/sales (%) | ? | ? | ? | ? | ? |

**Required**: Calculate the missing account balances using the relationships between these accounts. Percentage can be rounded to the nearest two decimal places.

---

**EXERCISE 5–8 (LO6)** **Watch video**

Refer to the information in EXERCISE 5–6.

**Required**:

**a.** Prepare all closing entries. Assume cash dividends totalling $2,000 were declared during the year and recorded as a debit to Dividends Declared and a credit to Cash.

**b.** Calculate the June 30, 2023 post-closing balance in Retained Earnings assuming a beginning balance of $18,000.

**EXERCISE 5–9 (LO7 Appendix)**

Consider the information for each of the following four companies.

| | *A* | *B* | *C* | *D* |
|---|---|---|---|---|
| Opening Inventory | $ ? | $ 184 | $ 112 | $ 750 |
| Purchases | 1415 | ? | 840 | 5,860 |
| Transportation-In | 25 | 6 | 15 | ? |
| Cost of Goods Available for Sale | 1,940 | 534 | ? | 6,620 |
| Ending Inventory | 340 | 200 | 135 | ? |
| Cost of Goods Sold | ? | ? | ? | 5,740 |

**Required**: Calculate the missing amounts.

**EXERCISE 5–10 (LO7 Appendix)**

The following data pertain to Pauling Inc.

| | |
|---|---|
| Opening Inventory | $ 375 |
| Purchases | 2930 |
| Purchases Discounts | 5 |
| Purchases Returns and Allowances | 20 |
| Transportation-In | 105 |

Ending inventory amounts to $440.

**Required**: Calculate cost of goods sold.

**EXERCISE 5–11 (LO7 Appendix)**

The following information is taken from the records of four different companies in the same industry:

| | *A* | *B* | *C* | *D* |
|---|---|---|---|---|
| Sales | $300 | $150 | $ ? | $ 90 |
| Opening Inventory | ? | 40 | 40 | 12 |
| Purchases | 240 | ? | ? | 63 |
| Cost of Goods Available for Sale | 320 | ? | 190 | ? |
| Ending Inventory | ? | (60) | (60) | (15) |
| Cost of Goods Sold | ? | 100 | 130 | 60 |
| Gross Profit | $100 | $ ? | $ 65 | $ ? |
| Gross Profit percentage | ? | ? | ? | ? |

**Required**:

**a.** Calculate the missing amounts.

**b.** Which company seems to be performing best? Why?

## Problems

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**PROBLEM 5–1 (LO1,2,3,4)**

Salem Corp. was incorporated on July 2, 2023 to operate a merchandising business. It uses the perpetual inventory system. All its sales are on account with terms: 2/10, n30. Its transactions during July 2023 are as follows:

July 2 Issued share capital for $5,000 cash.
2 Purchased $3,500 merchandise on account from Blic Pens Ltd. for terms 2/10, n30.
2 Sold $2,000 of merchandise on account to Spellman Chair Rentals Inc. (Cost to Salem: $1,200).
3 Paid Sayer Holdings Corp. $500 for July rent.
5 Paid Easton Furniture Ltd. $1,000 for equipment.
8 Collected $200 for a cash sale made today to Ethan Matthews Furniture Ltd. (Cost: $120).
8 Purchased $2,000 merchandise on account from Shaw Distributors Inc. for terms 2/15, n30.
9 Received the amount due from Spellman Chair Rentals Inc. for the July 2 sale.
10 Paid Blic Pens Ltd. for the July 2 purchase.
10 Purchased $200 of merchandise on account from Peel Products Inc. for terms n30.
15 Sold $2,000 of merchandise on account to Eagle Products Corp. (Cost: $1,300).
15 Purchased $1,500 of merchandise on account from Bevan Door Inc. for terms 2/10, n30.
15 Received a memo from Shaw Distributors Inc. to reduce accounts payable by $100 for defective merch
16 Eagle Products Corp. returned $200 of defective merchandise which was scrapped (Cost to Salem: $15

20 Sold $3,500 of merchandise on account to Aspen Promotions Ltd. (Cost: $2,700).
20 Paid Shaw Distributors Inc. for half the purchase made July 8.
24 Received half the amount due from Eagle Products Corp. in partial payment for the July 15 sale.
24 Paid Bevan Doors Ltd. for the purchase made July 15.
26 Sold $600 merchandise on account to Longbeach Sales Ltd. (Cost: $400).
26 Purchased $800 of merchandise on account from Silverman Co. for terms 2/10, n30.
31 Paid Speedy Transport Co. $350 for transportation to Salem's warehouse during the month (all purchas

**Required**:

1. Prepare journal entries to record the July transactions. Include general ledger account numbers and a brief description.
2. Calculate the unadjusted ending balance in merchandise inventory.
3. Assume the merchandise inventory is counted at July 31 and assigned a total cost of $2,400. Prepare the July 31 adjusting entry.

---

**PROBLEM 5–2 (LO1,5,6)**

The following closing entries were prepared for Whirlybird Products Inc. at December 31, 2023, the end of its fiscal year.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Dec. 31 | Sales | | 37,800 | |
| | Income Summary | | | 37,800 |
| 31 | Income Summary | | 32,800 | |
| | Cost of Goods Sold | | | 26,800 |
| | Sales Returns and Allowances | | | 690 |
| | Sales Discounts | | | 310 |
| | Salaries Expenses | | | 5,000 |
| 31 | Income Summary | | 5,000 | |
| | Retained Earnings | | | 5,000 |

**Required**: Calculate gross profit.

---

**PROBLEM 5–3 (LO1,5,6)**

The following alphabetized adjusted trial balance has been extracted from the records of Acme Automotive Inc. at December 31, 2023, its third fiscal year-end. All accounts have a normal balance.

| | |
|---|---|
| Accounts Payable | 9,000 |
| Accounts Receivable | 15,000 |
| Accumulated Depreciation – Equipment | 36,000 |
| Advertising Expense | 14,000 |
| Bank Loan | 14,000 |
| Cash | 2,000 |
| Commissions Expense | 29,000 |
| Cost of Goods Sold | 126,000 |
| Delivery Expense | 14,800 |
| Depreciation Expense | 12,000 |
| Dividends | 11,000 |
| Equipment | 120,000 |
| Income Taxes Expense | 4,200 |
| Income Taxes Payable | 4,200 |
| Insurance Expense | 10,400 |
| Interest Expense | 840 |
| Merchandise Inventory | 26,000 |
| Office Supplies Expense | 3,100 |
| Rent Expense | 32,400 |
| Rent Revenue | 19,200 |
| Retained Earnings | 12,440 |
| Sales | 310,000 |
| Sales Discounts | 1,300 |
| Sales Returns and Allowances | 2,900 |
| Sales Salaries Expense | 26,400 |
| Share Capital | 70,000 |
| Supplies | 3,200 |
| Telephone Expense | 1,800 |
| Utilities Expense | 4,200 |
| Wages Expense – Office | 14,300 |

**Required**:

1. Prepare a classified multi-step income statement and statement of changes in equity for the year ended December 31, 2023. Assume 40% of the Rent Expense is allocated to general and administrative expenses with the remainder allocated to selling expenses. Additionally, assume that $20,000 of shares were issued during the year ended December 31, 2023.

2. Prepare closing entries.

---

**PROBLEM 5–4 (LO1,2,3,4) Challenge Question – Pulling It All Together**

Calculating Purchases, Inventory Shrinkage, Net Sales, Cost Goods Sold, Gross Profit, and Net Income/(Loss)

The information below is a summary of the merchandise inventory and sales transactions for 2023.

| | |
|---|---|
| Total cost of purchases | $250,000 |
| Total sales | 580,000 |
| Purchases shipping costs | 500 |
| Merchandise inventory, opening balance | 55,000 |
| Purchase discounts | 3,500 |
| Sales discounts | 200 |
| Total sales returns to inventory | 100 |
| Merchandise inventory, closing GL balance | 90,000 |
| Merchandise inventory, physical inventory count | 88,500 |
| Sales allowances | 600 |
| Operating expenses | 250,000 |
| Sales returns | 200 |
| Purchase returns and allowances | 200 |
| Net purchases | ? |
| Inventory shrinkage adjustment amount | ? |
| Cost of goods sold | ? |
| Net sales | ? |
| Gross profit | ? |
| Net income/(loss) | ? |
| Gross profit ratio | ? |

**Required**: Calculate and fill in the blanks. (Hint: Refer to the merchandising company illustration in Section 5.1 and the T-account summary illustrations for inventory and cost of goods sold at the end of Section 5.4.)

---

**PROBLEM 5–5 (LO1,2,3,5,6) Preparing a Classified Multiple-step Income Statement and Closing Entries**

Below is the adjusted trial balance presented in alphabetical order for Turret Retail Ltd., for 2023. Their year-end is December 31.

Turret Retail Ltd.
Trial Balance
At December 31, 2023

| | | |
|---|---|---|
| Accounts payable | | $ 31,250 |
| Accounts receivable | $140,000 | |
| Accrued salaries and benefits payable | | 12,000 |
| Accumulated depreciation, furniture | | 4,300 |
| Cash | 21,000 | |
| Cash dividends | 10,000 | |
| Cost of goods sold | 240,000 | |
| Bank loan payable (long-term) | | 40,320 |
| Depreciation expense | 3,200 | |
| Copyright | 20,000 | |
| Furniture | 20,000 | |
| Income tax expense | 2,028 | |
| Income taxes payable | | 8,000 |
| Insurance expense | 5,000 | |
| Interest expense | 200 | |
| Interest payable | | 550 |
| Land | 140,000 | |
| Merchandise inventory | 120,000 | |
| Prepaid insurance expense | 6,000 | |
| Rent expense | 30,240 | |
| Rental income | | 6,000 |
| Retained earnings | | 307,748 |
| Salaries expense | 57,000 | |
| Sales | | 360,000 |
| Sales discounts | 3,600 | |
| Sales returns and allowances | 9,600 | |
| Share capital | | 20,000 |
| Shop supplies expense | 2,400 | |
| Shop supplies expense | 1,000 | |
| Travel expense | 2,100 | |
| Unearned revenue | | 50,500 |
| Utilities expense | 7,300 | |
| | $840,668 | $840,668 |

**Required**:

1. Prepare a classified multiple-step income statement in good form, reporting operating expenses by nature, for the year ended December 31, 2023.

2. Prepare the closing entries for the year-ended December 31, 2023.
3. Calculate the gross profit ratio to two decimal places and comment on what this ratio means.

---

**PROBLEM 5–6 (LO1,2,3,4,5) Challenge Question – Preparing Adjusting Entries and a Classified Multiple-step Income Statement**

Below are the unadjusted accounts balances for Yuba Yabi Enterprises Ltd., for the year ended March 31, 2023. All account balances are normal. Yuba Yabi's business involves selling frozen food to restaurants as well as providing consulting services to assist restaurant businesses with their daily operations.

Yuba Yabi Enterprises Ltd.
Unadjusted Trial Balance
March 31, 2023

| | |
|---|---|
| Accounts payable | 68,750 |
| Accounts receivable | 308,000 |
| Accrued salaries and benefits payable | 26,400 |
| Accumulated depreciation, furniture | 9,460 |
| Cash | 46,200 |
| Cash dividends | 22,000 |
| Cost of goods sold | 528,000 |
| Advertising expense | 9,900 |
| Bank loan payable (long-term) | 88,704 |
| Depreciation expense | 7,040 |
| Copyright | 44,000 |
| Franchise | 66,000 |
| Furniture | 44,000 |
| Income tax expense | - |
| Income taxes payable | 17,600 |
| Insurance expense | 11,000 |
| Interest expense | 440 |
| Interest payable | 1,210 |
| Land | 308,000 |
| Merchandise inventory | 264,000 |
| Prepaid insurance expense | 13,200 |
| Prepaid advertising expense | 8,800 |
| Rent expense | 66,528 |
| Rental income | 13,200 |
| Retained earnings | 265,364 |
| Salaries expense | 125,400 |
| Sales | 792,000 |
| Sales discounts | 7,920 |
| Sales returns and allowances | 21,120 |
| Service revenue | 495,000 |
| Share capital | 44,000 |
| Shop supplies | 8,360 |
| Shop supplies expense | 2,200 |
| Travel expense | 4,620 |
| Unearned service revenue | 111,100 |
| Utilities expense | 16,060 |

Additional information:

The following are adjusting entries that have not yet been recorded:

| | |
|---|---|
| Accrued salaries | $12,000 |
| Accrued interest on the bank loan | 5,600 |
| Inventory shrinkage | 7,800 |
| Prepaid insurance expense | 5,000 has expired |
| Prepaid advertising expense | no change |
| Unearned revenue | 30,000 has been earned |
| Income tax rate | 30% |

**Required**:

1. Update the affected accounts by the adjustments, if any. Round all adjustments to the nearest whole dollar.
2. Prepare a classified multiple-step income statement in good form for the year ended March 31, 2023.

# Chapter 6

# Assigning Costs to Merchandise

Recording transactions related to the purchase and sale of merchandise inventory was introduced and discussed in Chapter 5. This chapter reviews how the cost of goods sold is calculated using various inventory cost flow assumptions. Additionally, issues related to merchandise inventory that remains on hand at the end of an accounting period are also explored.

## Chapter 6 Learning Objectives

LO1 – Calculate cost of goods sold and merchandise inventory using specific identification, first-in first-out (FIFO), and weighted average cost flow assumptions — perpetual.

LO2 – Explain the impact on financial statements of inventory cost flows and errors.

LO3 – Explain and calculate lower of cost and net realizable value inventory adjustments.

LO4 – Estimate merchandise inventory using the gross profit method and the retail inventory method.

LO5 – Explain and calculate merchandise inventory turnover.

LO6 – Calculate cost of goods sold and merchandise inventory using specific identification, first-in first-out (FIFO), and weighted average cost flow assumptions — periodic.

## Concept Self-Check

Use the following as a self-check while working through Chapter 6

1. What three inventory cost flow assumptions can be used in perpetual inventory systems?
2. What impact does the use of different inventory cost flow assumptions have on financial statements?
3. What is the meaning of the term *lower of cost and net realizable value*, and how is it calculated?
4. What is the effect on net income of an error in ending inventory values?

5. What methods are used to estimate ending inventory?
6. What ratio can be used to evaluate the liquidity of merchandise inventory?
7. What inventory cost flow assumptions can be used in a periodic inventory system?

**NOTE:** The purpose of these questions is to prepare you for the concepts introduced in the chapter. Your goal should be to answer each of these questions as you read through the chapter. If, when you complete the chapter, you are unable to answer one or more the Concept Self-Check questions, go back through the content to find the answer(s). Solutions are not provided to these questions.

## 6.1 Inventory Cost Flow Assumptions

LO1 – Calculate cost of goods sold and merchandise inventory using specific identification, first in first-out (FIFO), and weighted average cost flow assumptions — perpetual.

Determining the cost of each unit of inventory, and thus the total cost of ending inventory on the balance sheet, can be challenging. Why? We know from Chapter 5 that the cost of inventory can be affected by discounts, returns, transportation costs, and shrinkage. Additionally, the purchase cost of an inventory item can be different from one purchase to the next. For example, the cost of coffee beans could be $5.00 a kilo in October and $7.00 a kilo in November. Finally, some types of inventory flow into and out of the warehouse in a specific sequence, while others do not. For example, milk would need to be managed so that the oldest milk is sold first. In contrast, a car dealership has no control over which vehicles are sold because customers make specific choices based on what is available. So how is the cost of a unit in merchandise inventory determined? There are several methods that can be used. Each method may result in a different cost, as described in the following sections.

Assume a company sells only one product and uses the perpetual inventory system. It has no beginning inventory at June 1, 2023. The company purchased five units during June as shown in Figure 6.1.

| | *Purchase Transaction* | |
|---|---|---|
| *Date* | *Number of units* | *Price per unit* |
| June 1 | 1 | $1 |
| 5 | 1 | 2 |
| 7 | 1 | 3 |
| 21 | 1 | 4 |
| 28 | 1 | 5 |
| | 5 | $15 |

**Figure 6.1: June Purchases and Purchase Price per Unit**

At June 28, there are 5 units in inventory with a total cost of $15 ($1 + $2 + $3 + $4 + $5). Assume four units are sold June 30 for $10 each on account. The cost of the four units sold could be determined based on identifying the cost associated with the specific units sold. For example, a car dealership tracks the cost of each vehicle purchased and sold. Alternatively, a business that sells perishable items would want the oldest units to move out of inventory first to minimize spoilage. Finally, if large quantities of low dollar value items are in inventory, such as pencils or hammers, an average cost might be used to calculate cost of goods sold. A business may choose one of three methods to calculate cost of goods and the resulting ending inventory based on an assumed flow. These methods are: specific identification, FIFO, and weighted average, and are discussed in the next sections.

## Specific Identification

Under **specific identification**, each inventory item that is sold is matched with its purchase cost. This method is most practical when inventory consists of relatively few, expensive items, particularly when individual units can be identified with serial numbers — for example, motor vehicles.

Assume the four units sold on June 30 are those purchased on June 1, 5, 7, and 28. The fourth unit purchased on June 21 remains in ending inventory. Cost of goods sold would total $11 ($1 + $2 + $3 + $5). Sales would total $40 (4 @ $10). As a result, gross profit would be $29 ($40 – 11). Ending inventory would be $4, the cost of the unit purchased on June 21.

The general ledger T-accounts for Merchandise Inventory and Cost of Goods Sold would show:

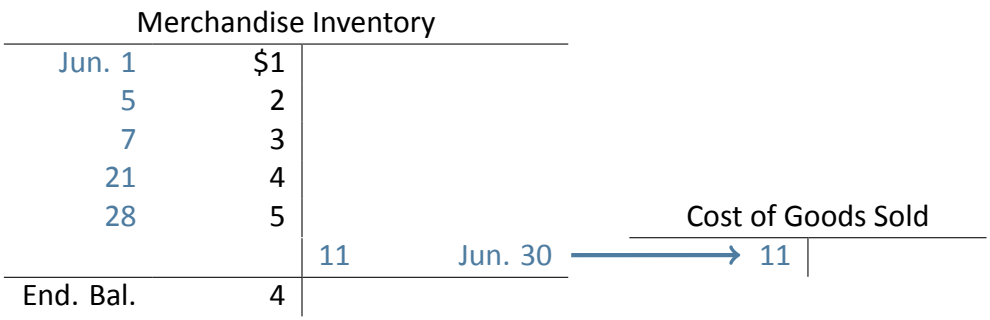



**Figure 6.2: Cost of Goods Sold using Specific Identification**

The entry to record the June 30 sale on account would be:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Accounts Receivable | | 40 | |
| | Sales | | | 40 |
| | To record the sale of merchandise on account. | | | |
| | Cost of Goods Sold | | 11 | |
| | Merchandise Inventory | | | 11 |
| | To record the cost of the sale. | | | |

It is not possible to use specific identification when inventory consists of a large number of similar, inexpensive items that cannot be easily differentiated. Consequently, a method of assigning costs to inventory items based on an **assumed** flow of goods can be adopted. Two such generally accepted methods, known as cost flow assumptions, are discussed next.

## The First-in, First-out (FIFO) Cost Flow Assumption

**First-in, first-out (FIFO)** assumes that the first goods purchased are the first ones sold. A FIFO cost flow assumption makes sense when inventory consists of perishable items such as groceries and other time-sensitive goods.

Using the information from the previous example, the first four units purchased are assumed to be the first four units sold under FIFO. The cost of the four units sold is $10 ($1 + $2 + $3 + $4). Sales still equal $40, so gross profit under FIFO is $30 ($40 – $10). The cost of the one remaining unit in ending inventory would be the cost of the fifth unit purchased ($5).

The general ledger T-accounts for Merchandise Inventory and Cost of Goods Sold as illustrated in Figure 6.3 would show:

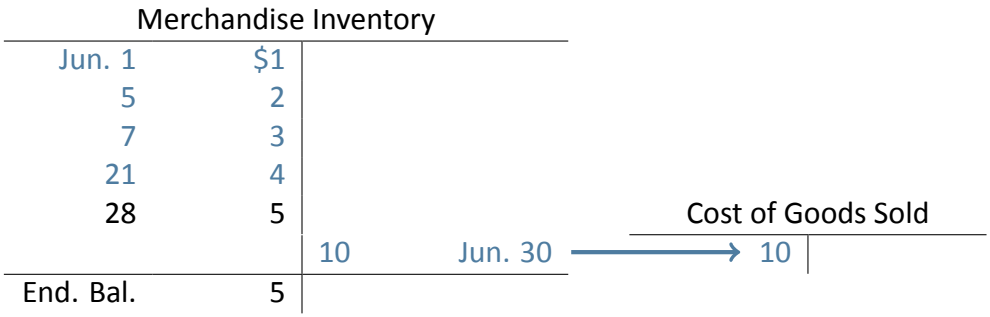



**Figure 6.3: Cost of Goods Sold using FIFO**

The entry to record the sale would be:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Accounts Receivable | | 40 | |
| | Sales | | | 40 |
| | To record the sale of merchandise on account. | | | |
| | Cost of Goods Sold | | 10 | |
| | Merchandise Inventory | | | 10 |
| | To record the cost of the sale. | | | |

## The Weighted Average Cost Flow Assumption

A **weighted average** cost flow is assumed when goods purchased on different dates are mixed with each other. The weighted average cost assumption is popular in practice because it is easy to calculate. It is also suitable when inventory is held in common storage facilities — for example, when several crude oil shipments are stored in one large holding tank. To calculate a weighted average, the total cost of all purchases of a particular inventory type is divided by the number of units purchased.

To calculate the weighted average cost in our example, the purchase prices for all five units are totaled ($1 + $2 + $3 + $4 + $5 = $15) and divided by the total number of units purchased (5). The weighted average cost for each unit is $3 ($15/5). The weighted average cost of goods sold would be $12 (4 units @ $3). Sales still equal $40 resulting in a gross profit under weighted average of $28 ($40 – $12). The cost of the one remaining unit in ending inventory is $3.

The general ledger T-accounts for Merchandise Inventory and Cost of Goods Sold are:

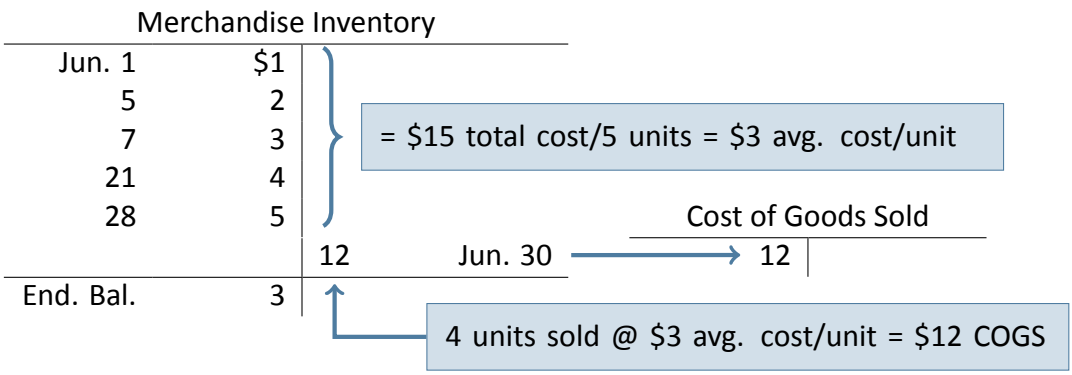



**Figure 6.4: Cost of Goods Sold using Weighted Average**

The entry to record the sale would be:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Accounts Receivable | | 40 | |
| | Sales | | | 40 |
| | To record the sale of merchandise on account. | | | |
| | Cost of Goods Sold | | 12 | |
| | Merchandise Inventory | | | 12 |
| | To record the cost of the sale. | | | |

## Cost Flow Assumptions: A Comprehensive Example

Recall that under the perpetual inventory system, cost of goods sold is calculated and recorded in the accounting system at the time when sales are recorded. In our simplified example, all sales occurred on June 30 after all inventory had been purchased. In reality, the purchase and sale of merchandise is continuous. To demonstrate the calculations when purchases and sales occur continuously throughout the accounting period, let's review a more comprehensive example.

Assume the same example as above, except that sales of units occur as follows during June:

| *Date* | *Number of Units Sold* |
|---|---|
| June 3 | 1 |
| 8 | 1 |
| 23 | 1 |
| 29 | 1 |

To help with the calculation of cost of goods sold, an *inventory record card* will be used to track the individual transactions. This card records information about purchases such as the date, number

of units purchased, and purchase cost per unit. It also records cost of goods sold information: the date of sale, number of units sold, and the cost of each unit sold. Finally, the card records the balance of units on hand, the cost of each unit held, and the total cost of the units on hand. A partially-completed inventory record card is shown in Figure 6.5 below:

| | Purchases/Shipping Costs/ (Purchase Returns/Discounts) | | | Cost of Goods Sold/ (Returns to Inventory) | | | Balance in Inventory | | |
|---|---|---|---|---|---|---|---|---|---|
| Date | Units | Cost/Unit | Total $ | Units | Cost/Unit | Total $ | Units | Cost/Unit | Total $ |
| June 1 | 1 | | | | | | 1 | | |
| 3 | | | | 1 | | | 0 | | |
| 5 | 1 | | | | | | 1 | | |
| 7 | 1 | | | | | | 2 | | |
| 8 | | | | 1 | | | 1 | | |
| 21 | 1 | | | | | | 2 | | |
| 23 | | | | 1 | | | 1 | | |
| 28 | 1 | | | | | | 2 | | |
| 29 | | | | 1 | | | 1 | | |

Ending Inventory is 1 unit.

**Figure 6.5: Inventory Record Card**

In Figure 6.5, the inventory at the end of the accounting period is one unit. This is the number of units on hand according to the accounting records. A *physical* inventory count must still be done, generally at the end of the fiscal year, to verify the quantities actually on hand. As discussed in Chapter 5, any discrepancies identified by the physical inventory count are adjusted for as shrinkage.

As purchases and sales are made, costs are assigned to the goods using the chosen cost flow assumption. This information is used to calculate the cost of goods sold amount for each sales transaction at the time of sale. These costs will vary depending on the inventory cost flow assumption used. As we will see in the next sections, the cost of sales may also vary depending on *when* sales occur.

### Comprehensive Example—Specific Identification

To apply specific identification, we need information about which units were sold on each date. Assume that specific units were sold as detailed below.

| Date of Sale | Specific Units Sold |
|---|---|
| June 3 | The unit sold on June 3 was purchased on June 1 |
| 8 | The unit sold on June 8 was purchased on June 7 |
| 23 | The unit sold on June 23 was purchased on June 5 |
| 29 | The unit sold on June 29 was purchased on June 28 |

Using the information above to apply specific identification, the resulting inventory record card appears in Figure 6.6.

| | Purchases/Shipping Costs/ (Purchase Returns/Discounts) | | | Cost of Goods Sold/ (Returns to Inventory) | | | Balance in Inventory | | |
|---|---|---|---|---|---|---|---|---|---|
| Date | Units | Cost/Unit | Total $ | Units | Cost/Unit | Total $ | Units | Cost/Unit | Total $ |
| June 1 | 1 | $1 | $1 | | | | 1 | $1 | $1 |
| 3 | | | | 1 | $1 | $1 | 0 | $0 | $0 |
| 5 | 1 | $2 | $2 | | | | 1 | $2 | $2 |
| 7 | 1 | $3 | $3 | | | | 2 | 1@$2<br>1@$3 | $5 |
| 8 | | | | 1 | $3 | $3 | 1 | $2 | $2 |
| 21 | 1 | $4 | $4 | | | | 2 | 1@$2<br>1@$4 | $6 |
| 23 | | | | 1 | $2 | $2 | 1 | $4 | $4 |
| 28 | 1 | $5 | $5 | | | | 2 | 1@$4<br>1@$5 | $9 |
| 29 | | | | 1 | $5 | $5 | 1 | $4 | $4 |

**Figure 6.6: Inventory Record Card using Specific Identification**

Notice in Figure 6.7 that the number of units sold plus the units in ending inventory equals the total units that were available for sale. This will always be true regardless of which inventory cost flow method is used.

| | Purchases/Shipping Costs/ (Purchase Returns/Discounts) | | | Cost of Goods Sold/ (Returns to Inventory) | | | Balance in Inventory | | |
|---|---|---|---|---|---|---|---|---|---|
| Date | Units | Cost/Unit | Total $ | Units | Cost/Unit | Total $ | Units | Cost/Unit | Total $ |
| June 1 | 1 | $1 | $1 | | | | 1 | $1 | $1 |
| 3 | | | | 1 | $1 | $1 | 0 | $0 | $0 |
| 5 | 1 | $2 | $2 | | | | 1 | $2 | $2 |
| 7 | 1 | $3 | $3 | | | | 2 | 1@$2<br>1@$3 | $5 |
| 8 | | | | 1 | $3 | $3 | 1 | $2 | $2 |
| 21 | 1 | $4 | $4 | | | | 2 | 1@$2<br>1@$4 | $6 |
| 23 | | | | 1 | $2 | $2 | 1 | $4 | $4 |
| 28 | 1 | $5 | $5 | | | | 2 | 1@$4<br>1@$5 | $9 |
| 29 | | | | 1 | $5 | $5 | 1 | $4 | $4 |

Total number of units available for sale: **5 units** = Total number of units sold: **4 units** + Total number of units in ending inventory: **1 unit**

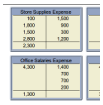
**Figure 6.7: Total Units Sold plus Total Units in Ending Inventory equals Total Units Available for Sale**

| | Purchases/Shipping Costs/ (Purchase Returns/Discounts) | | | Cost of Goods Sold/ (Returns to Inventory) | | | Balance in Inventory | | |
|---|---|---|---|---|---|---|---|---|---|
| Date | Units | Cost/Unit | Total $ | Units | Cost/Unit | Total $ | Units | Cost/Unit | Total $ |
| June 1 | 1 | $1 | $1 | | | | 1 | $1 | $1 |
| 3 | | | | 1 | $1 | $1 | 0 | $0 | $0 |
| 5 | 1 | $2 | $2 | | | | 1 | $2 | $2 |
| 7 | 1 | $3 | $3 | | | | 2 | 1@$2<br>1@$3 | $5 |
| 8 | | | | 1 | $3 | $3 | 1 | $2 | $2 |
| 21 | 1 | $4 | $4 | | | | 2 | 1@$2<br>1@$4 | $6 |
| 23 | | | | 1 | $2 | $2 | 1 | $4 | $4 |
| 28 | 1 | $5 | $5 | | | | 2 | 1@$4<br>1@$5 | $9 |
| 29 | | | | 1 | $5 | $5 | 1 | $4 | $4 |

Total cost of goods available for sale: **$15** = Total cost of goods sold: **$11** + Total cost of ending inventory: **$4**

**Figure 6.8: Total Cost of Goods Sold plus Total Cost of Units in Ending Inventory equals Total Cost of Goods Available for Sale (Specific Identification)**

Figure 6.8 highlights the relationship in which total cost of goods sold plus total cost of ending inventory equals total cost of goods available for sale. This relationship will always be true for each of specific identification, FIFO, and weighted average.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Specific Identification.

**Comprehensive Example—FIFO (Perpetual)**

Using the same information, we now apply the FIFO cost flow assumption as shown in Figure 6.9.

| | Purchases/Shipping Costs/ (Purchase Returns/Discounts) | | | Cost of Goods Sold/ (Returns to Inventory) | | | Balance in Inventory | | |
|---|---|---|---|---|---|---|---|---|---|
| Date | Units | Cost/Unit | Total $ | Units | Cost/Unit | Total $ | Units | Cost/Unit | Total $ |
| June 1 | 1 | $1 | $1 | | | | 1 | $1 | $1 |
| 3 | | | | 1 | $1 | $1 | 0 | $0 | $0 |
| 5 | 1 | $2 | $2 | | | | 1 | $2 | $2 |
| 7 | 1 | $3 | $3 | | | | 2 | 1@$2<br>1@$3 | $5 |
| 8 | | | | 1 | $2 | $2 | 1 | $3 | $3 |
| 21 | 1 | $4 | $4 | | | | 2 | 1@$3<br>1@$4 | $7 |
| 23 | | | | 1 | $3 | $3 | 1 | $4 | $4 |
| 28 | 1 | $5 | $5 | | | | 2 | 1@$4<br>1@$5 | $9 |
| 29 | | | | 1 | $4 | $4 | 1 | $5 | $5 |

**Figure 6.9: Inventory Record Card using FIFO (Perpetual)**

When calculating the cost of the units sold in FIFO, the oldest unit in inventory will always be the first unit removed. For example, in Figure 6.9, on June 8, one unit is sold when the previous balance in inventory consisted of 2 units: 1 unit purchased on June 5 that cost $2 and 1 unit purchased on June 7 that cost $3. Because the unit costing $2 was in inventory first (before the June 7 unit costing $3), the cost assigned to the unit sold on June 8 is $2. Under FIFO, the first units into inventory are assumed to be the first units removed from inventory when calculating cost of goods sold. Therefore, under FIFO, ending inventory will always be the most recent units purchased. In Figure 6.9, there is one unit in ending inventory and it is assigned the $5 cost of the most recent purchase which was made on June 28.

The information in Figure 6.9 is repeated in Figure 6.10 to reinforce that goods available for sale equals the sum of goods sold and ending inventory.

| | Purchases/Shipping Costs/ (Purchase Returns/Discounts) | | | Cost of Goods Sold/ (Returns to Inventory) | | | Balance in Inventory | | |
|---|---|---|---|---|---|---|---|---|---|
| Date | Units | Cost/Unit | Total $ | Units | Cost/Unit | Total $ | Units | Cost/Unit | Total $ |
| June 1 | 1 | $1 | $1 | | | | 1 | $1 | $1 |
| 3 | | | | 1 | $1 | $1 | 0 | $0 | $0 |
| 5 | 1 | $2 | $2 | | | | 1 | $2 | $2 |
| 7 | 1 | $3 | $3 | | | | 2 | 1@$2<br>1@$3 | $5 |
| 8 | | | | 1 | $2 | $2 | 1 | $3 | $3 |
| 21 | 1 | $4 | $4 | | | | 2 | 1@$3<br>1@$4 | $7 |
| 23 | | | | 1 | $3 | $3 | 1 | $4 | $4 |
| 28 | 1 | $5 | $5 | | | | 2 | 1@$4<br>1@$5 | $9 |
| 29 | | | | 1 | $4 | $4 | 1 | $5 | $5 |

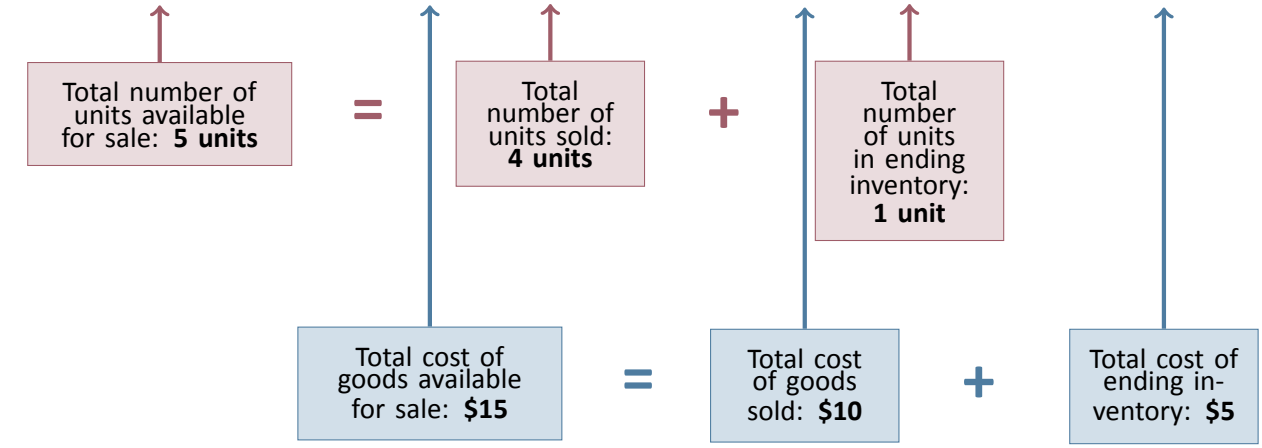
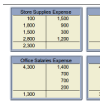



**Figure 6.10: Total Goods Sold plus Ending Inventory equals Total Goods Available for Sale (FIFO Perpetual)**



An exploration is available on the Lyryx site. Log into your Lyryx course to run FIFO Perpetual.

### Comprehensive Example—Weighted Average (Perpetual)

The inventory record card transactions using weighted average costing are detailed in Figure 6.11. ***For consistency, all weighted average calculations will be rounded to two decimal places.*** When a perpetual inventory system is used, the weighted average is calculated each time a purchase is made. For example, after the June 7 purchase, the balance in inventory is 2 units with a total cost of $5.00 (1 unit at $2.00 + 1 unit at $3.00) resulting in an average cost per unit of $2.50 ($5.00 ÷ 2 units = $2.50). When a sale occurs, the cost of the sale is based on the most recent average cost per unit. For example, the cost of the sale on June 3 uses the $1.00 average cost per unit from June 1 while the cost of the sale on June 8 uses the $2.50 average cost per unit from June 7.

| Date | Purchases/Shipping Costs/ (Purchase Returns/Discounts) | | | Cost of Goods Sold/ (Returns to Inventory) | | | Balance in Inventory | | |
|---|---|---|---|---|---|---|---|---|---|
| | Units | Cost/Unit | Total $ | Units | Cost/Unit | Total $ | Units | AvgCost/Unit | Total $ |
| June 1 | 1 | $1 | $1 | | | | 1 | $1.00 | $1.00 |
| 3 | | | | 1 | $1.00 | $1.00 | 0 | $0.00 | $0.00 |
| 5 | 1 | $2 | $2 | | | | 1 | $2.00 | $2.00 |
| 7 | 1 | $3 | $3 | | | | 2 | $2.50 | $5.00 |
| 8 | | | | 1 | $2.50 | $2.50 | 1 | $2.50 | $2.50 |
| 21 | 1 | $4 | $4 | | | | 2 | $3.25 | $6.50 |
| 23 | | | | 1 | $3.25 | $3.25 | 1 | $3.25 | $3.25 |
| 28 | 1 | $5 | $5 | | | | 2 | $4.13* | $8.25 |
| 29 | | | | 1 | $4.13 | $4.13 | 1 | $4.12 | $4.12 |

| Calculating AvgCost/Unit | | | | |
|---|---|---|---|---|
| Total $ | ÷ | Total Units | = | AvgCost/ Unit |
| $1.00 | ÷ | 1 | = | $1.00/unit |
| $0.00 | ÷ | 0 | = | $0.00/unit |
| $2.00 | ÷ | 1 | = | $2.00/unit |
| $5.00 | ÷ | 2 | = | $2.50/unit |
| $2.50 | ÷ | 1 | = | $2.50/unit |
| $6.50 | ÷ | 2 | = | $3.25/unit |
| $3.25 | ÷ | 1 | = | $3.25/unit |
| $8.25 | ÷ | 2 | = | $4.13*/unit |
| $4.12 | ÷ | 1 | = | $4.12/unit |

**** Rounded***

**Figure 6.11: Inventory Record Card using Weighted Average Costing (Perpetual)**

A common error made by students when applying weighted average occurs when the unit costs are rounded. For example, on June 28, the average cost per unit is rounded to $4.13 ($8.25 ÷ 2 units = $4.125/unit rounded to $4.13). On June 29, the cost of the unit sold is $4.13, the June 28 average cost per unit. Care must be taken to recognize that the total remaining balance in inventory after the June 29 sale is $4.12, calculated as the June 28 ending inventory total dollar amount of $8.25 less the June 29 total cost of goods sold of $4.13. Students will often incorrectly use the average cost per unit, in this case $4.13, to calculate the ending inventory balance. Remember that the cost of goods sold plus the balance in inventory must equal the goods available for sale as highlighted in Figure 6.12.

| Date | Purchases/Shipping Costs/ (Purchase Returns/Discounts) | | | Cost of Goods Sold/ (Returns to Inventory) | | | Balance in Inventory | | |
|---|---|---|---|---|---|---|---|---|---|
| | Units | Cost/Unit | Total $ | Units | Cost/Unit | Total $ | Units | AvgCost/Unit | Total $ |
| June 1 | 1 | $1 | $1 | | | | 1 | $1.00 | $1.00 |
| 3 | | | | 1 | $1.00 | $1.00 | 0 | $0.00 | $0.00 |
| 5 | 1 | $2 | $2 | | | | 1 | $2.00 | $2.00 |
| 7 | 1 | $3 | $3 | | | | 2 | $2.50 | $5.00 |
| 8 | | | | 1 | $2.50 | $2.50 | 1 | $2.50 | $2.50 |
| 21 | 1 | $4 | $4 | | | | 2 | $3.25 | $6.50 |
| 23 | | | | 1 | $3.25 | $3.25 | 1 | $3.25 | $3.25 |
| 28 | 1 | $5 | $5 | | | | 2 | $4.13* | $8.25 |
| 29 | | | | 1 | $4.13 | $4.13 | 1 | $4.12 | $4.12 |

| Calculating AvgCost/Unit | | | | |
|---|---|---|---|---|
| Total $ | ÷ | Total Units | = | AvgCost/ Unit |
| $1.00 | ÷ | 1 | = | $1.00/unit |
| $0.00 | ÷ | 0 | = | $0.00/unit |
| $2.00 | ÷ | 1 | = | $2.00/unit |
| $5.00 | ÷ | 2 | = | $2.50/unit |
| $2.50 | ÷ | 1 | = | $2.50/unit |
| $6.50 | ÷ | 2 | = | $3.25/unit |
| $3.25 | ÷ | 1 | = | $3.25/unit |
| $8.25 | ÷ | 2 | = | $4.13*/unit |
| $4.12 | ÷ | 1 | = | $4.12/unit |

** Rounded*

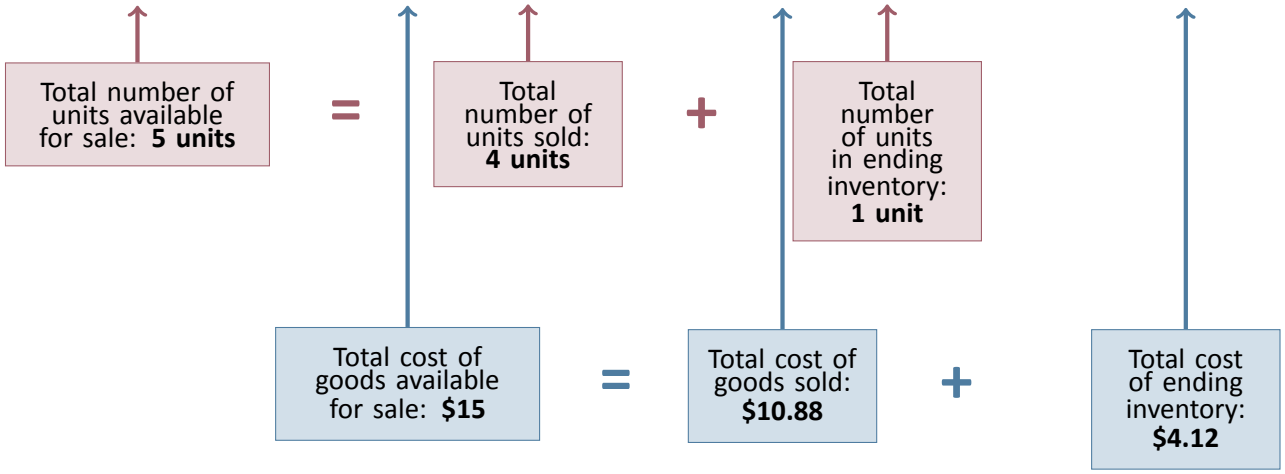
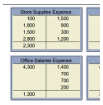



**Figure 6.12: Total Goods Sold plus Ending Inventory equals Total Goods Available for Sale (Weighted Average Perpetual)**



An exploration is available on the Lyryx site. Log into your Lyryx course to run Weighted Average Perpetual.

Figure 6.13 compares the results of the three cost flow methods. Goods available for sale, units sold, and units in ending inventory are the same regardless of which method is used. Because each cost flow method allocates the cost of goods available for sale in a particular way, the cost of goods sold and ending inventory values are different for each method.

| Cost Flow Assumption | Total Cost of Goods Available for Sale | Total Units Available for Sale | Total Cost of Goods Sold | Total Units Sold | Total Cost of Ending Inventory | Total Units in Ending Inventory |
|---|---|---|---|---|---|---|
| **Specific Identification** | $15.00 | 5 | 11.00 | 4 | 4.00 | 1 |
| **FIFO** | 15.00 | 5 | 10.00 | 4 | 5.00 | 1 |
| **Weighted Average** | 15.00 | 5 | 10.88 | 4 | 4.12 | 1 |

**Figure 6.13: Comparing Specific Identification, FIFO, and Weighted Average**

### Journal Entries

In Chapter 5 the journal entries to record the sale of merchandise were introduced. Chapter 5 showed how the dollar value included in these journal entries is determined. We now know that the information in the inventory record is used to prepare the journal entries in the general journal. For example, the credit sale on June 23 using weighted average costing would be recorded as follows (refer to Figure 6.13).

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Accounts Receivable . . . . . | | 10.00 | |
| | Sales . . . . . | | | 10.00 |
| | To record credit sale at a selling price of $10 per unit. | | | |
| | Cost of Goods Sold . . . . . | | 3.25 | |
| | Merchandise Inventory . . . . . | | | 3.25 |
| | To record the cost of the sale. | | | |

Perpetual inventory incorporates an internal control feature that is lost under the periodic inventory method. Losses resulting from theft and error can easily be determined when the actual quantity of goods on hand is counted and compared with the quantities shown in the inventory records as being on hand. It may seem that this advantage is offset by the time and expense required to continuously update inventory records, particularly where there are thousands of different items of various sizes on hand. However, computerization makes this record keeping easier

and less expensive because the inventory accounting system can be tied in to the sales system so that inventory is updated whenever a sale is recorded.

### Inventory Record Card

In a company such as a large drugstore or hardware chain, inventory consists of thousands of different products. For businesses that carry large volumes of many inventory types, the general ledger merchandise inventory account contains only summarized transactions of the purchases and sales. The detailed transactions for each type of inventory would be recorded in the underlying inventory record cards. The inventory record card is an example of a *subsidiary ledger*, more commonly called a *subledger*. The **merchandise inventory subledger** provides a detailed listing of type, amount, and total cost of all types of inventory held at a particular point in time. The sum of the balances on each inventory record card in the subledger would always equal the ending amount recorded in the Merchandise Inventory general ledger account. So a subledger contains the detail for each product in inventory while the general ledger account shows only a summary. In this way, the general ledger information is streamlined while allowing for detail to be available through the subledger. There are other types of subledgers: the accounts receivable subledger and the accounts payable subledger. These will be introduced in a subsequent chapter.

## 6.2 Financial Statement Impact of Different Inventory Cost Flows

LO2 – Explain the impact of inventory cost flows and errors.

When purchase costs are increasing, as in a period of inflation (or decreasing, as in a period of deflation), each cost flow assumption results in a different value for cost of goods sold and the resulting ending inventory, gross profit, and net income.

Using information from the preceding comprehensive example, the effects of each cost flow assumption on net income and ending inventory are shown in Figure 6.14.

| | *Spec. Ident.* | *FIFO* | *Wtd. Avg.* |
|---|---|---|---|
| Sales | $ 40.00 | $ 40.00 | $ 40.00 |
| Cost of goods sold | 11.00 | 10.00 | 10.88 |
| Gross profit and net income | $ 29.00 | $ 30.00 | $ 29.12 |
| Ending inventory (on the balance sheet) | $ 4.00 | $ 5.00 | $ 4.12 |

**Figure 6.14: Effects of Different Cost Flow Assumptions**

FIFO *maximizes* net income and ending inventory amounts when costs are rising. FIFO *minimizes* net income and ending inventory amounts when purchase costs are decreasing.

Because different cost flow assumptions can affect the financial statements, GAAP requires that the assumption adopted by a company be disclosed in its financial statements (full disclosure principle). Additionally, GAAP requires that once a method is adopted, it be used every accounting period thereafter (consistency principle) unless there is a justifiable reason to change. A business that has a variety of inventory items may choose a different cost flow assumption for each item. For example, Walmart might use weighted average to account for its sporting goods items and specific identification for each of its various major appliances.

## Effect of Inventory Errors on the Financial Statements

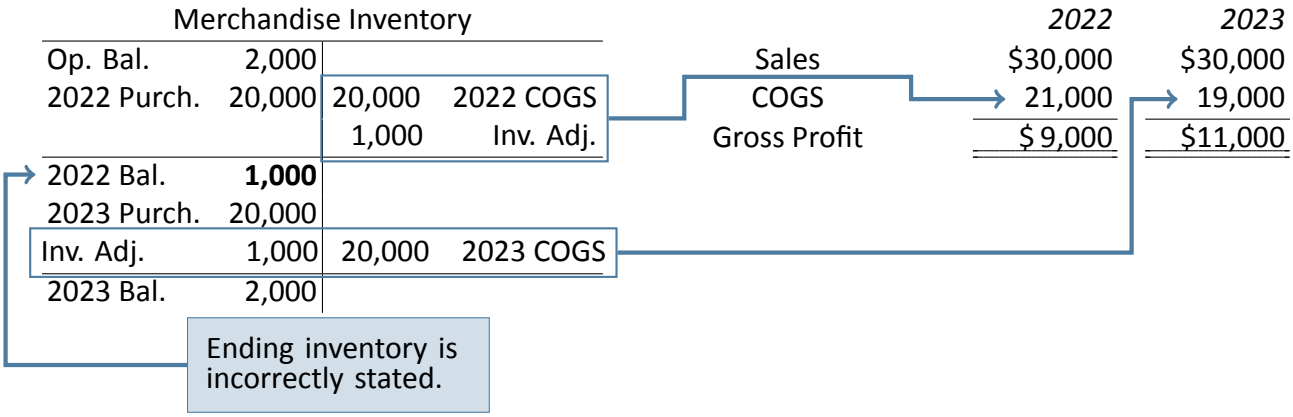
There are two components necessary to determine the inventory value disclosed on a corporation's balance sheet. The first component involves calculating the quantity of inventory on hand at the end of an accounting period by performing a physical inventory count. The second requirement involves assigning the most appropriate cost to this quantity of inventory.

An error in calculating either the quantity or the cost of ending inventory will misstate reported income for two time periods. Assume merchandise inventory at December 31, 2021, 2022, and 2023 was reported as $2,000 and that merchandise purchases during each of 2022 and 2023 were $20,000. There were no other expenditures. Assume further that sales each year amounted to $30,000 with cost of goods sold of $20,000 resulting in gross profit of $10,000. These transactions are summarized below.

| Merchandise Inventory | | | |
|---|---|---|---|
| Beg. Bal. | 2,000 | | |
| 2022 Purch. | 20,000 | 20,000 | 2022 COGS |
| 2022 Bal. | 2,000 | | |
| 2023 Purch. | 20,000 | 20,000 | 2023 COGS |
| 2023 Bal. | 2,000 | | |

| | *2022* | *2023* |
|---|---|---|
| Sales | $30,000 | $30,000 |
| COGS | 20,000 | 20,000 |
| Gross profit | $10,000 | $10,000 |

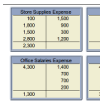
Assume now that ending inventory was misstated at December 31, 2022. Instead of the $2,000 that was reported, the correct value should have been $1,000. The effect of this error was to understate cost of goods sold on the income statement — cost of goods sold should have been $21,000 in 2022 as shown below instead of $20,000 as originally reported above. Because of the 2022 error, the 2023 beginning inventory was incorrectly reported above as $2,000 and should have been $1,000 as shown below. This caused the 2023 gross profit to be understated by $1,000 — cost of goods sold in 2023 should have been $19,000 as illustrated below but was originally reported above as $20,000.




As can be seen, income is misstated in both 2022 and 2023 because cost of goods sold in both years is affected by the adjustment to ending inventory needed at the end of 2022 and 2023. The opposite effects occur when inventory is understated at the end of an accounting period.

An error in ending inventory is offset in the next year because one year's ending inventory becomes the next year's opening inventory. This process can be illustrated by comparing gross profits for 2022 and 2023 in the above example. The sum of both years' gross profits is the same.

| | *Overstated Inventory* | *Correct Inventory* |
|---|---|---|
| Gross profit for 2022 | $10,000 | $ 9,000 |
| Gross profit for 2023 | 10,000 | 11,000 |
| Total | $20,000 | $20,000 |



An exploration is available on the Lyryx site. Log into your Lyryx course to run Inventory Errors.

## 6.3 Lower of Cost and Net Realizable Value (LCNRV)

LO3 – Explain and calculate lower of cost and net realizable value inventory adjustments.

In addition to the adjusting entry to record the shrinkage of merchandise inventory (discussed in Chapter 5), there is an additional adjusting entry to be considered at the end of the accounting period when calculating cost of goods sold and ending inventory values for the financial statements. Generally accepted accounting principles require that inventory be valued at the lesser amount of its *laid-down cost* and the amount for which it can likely be sold — its net realizable value (NRV). This concept is known as the lower of cost and net realizable value, or LCNRV. Note that the laid-down cost includes the invoice price of the goods (less any purchase discounts) plus transportation in, insurance while

in transit, and any other expenditure made by the purchaser to get the merchandise to the place of business and ready for sale.

As an example, a change in consumer demand may mean that inventories become obsolete and need to be reduced in value below the purchase cost. This often occurs in the electronics industry as new and more popular products are introduced.

The lower of cost and net realizable value can be applied to individual inventory items or groups of similar items, as shown in Figure 6.15 below.

| | | | *LCNRV* | |
|---|---|---|---|---|
| | *Total Cost* | *Total NRV* | *Unit Basis* | *Group Basis* |
| White paper | $1,250 | $1,200 | $1,200 | |
| Coloured paper | 1,400 | 1,500 | 1,400 | |
| Total | $2,650 | $2,700 | $2,600 | $2,650 |
| Ending inventory (LCNRV) | | | $2,600 | $2,650 |

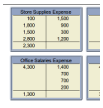
**Figure 6.15: LCNRV Calculations**

Depending on the calculation used, the valuation of ending inventory will be either $2,600 or $2,650. Under the unit basis, the lower of cost and net realizable value is selected for each item: $1,200 for white paper and $1,400 for coloured paper, for a total LCNRV of $2,600. Because the LCNRV is lower than cost, an adjusting entry must be recorded as follows.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Cost of Goods Sold . . . . . | | 50 | |
| | Merchandise Inventory . . . . . | | | 50 |
| | To adjust inventory to reflect its LCNRV. | | | |

The purpose of the adjusting entry is to ensure that inventory is not overstated on the balance sheet and that income is not overstated on the income statement.

If white paper and coloured paper are considered a similar group, the calculations in Figure 6.15 above show they have a combined cost of $2,650 and a combined net realizable value of $2,700. LCNRV would therefore be $2,650. In this case, the cost is equal to the LCNRV so no adjusting entry would be required if applying LCNRV on a group basis.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Lower of Cost or Net Realizable Value.

## 6.4 Estimating the Balance in Merchandise Inventory

LO4 – Estimate merchandise inventory using the gross profit method and the retail inventory method.

A physical inventory count determines the quantity of items on hand. When costs are assigned to these items and these individual costs are added, a total inventory amount is calculated. Is this dollar amount correct? Should it be larger? How can one tell if the physical count is accurate? Being able to estimate this amount provides a check on the reasonableness of the physical count and valuation.

The two methods used to estimate the inventory dollar amount are the *gross profit method* and the *retail inventory method*. Both methods are based on a calculation of the gross profit percentage in the income statement. Assume the following information:

| | | | |
|---|---|---|---|
| Sales | | $15,000 | 100% |
| *Cost of Goods Sold:* | | | |
| Opening Inventory | $ 4,000 | | |
| Purchases | 12,000 | | |
| Cost of Goods Available for Sale | 16,000 | | |
| *Less:* Ending Inventory | (6,000) | | |
| Cost of Goods Sold | | 10,000 | 67% |
| Gross Profit | | $ 5,000 | 33% |

The gross profit percentage, rounded to the nearest whole percent, is 33% ($5,000/15,000). This means that for each dollar of sales, an average of $.33 is left to cover other expenses after deducting cost of goods sold.

Estimating ending inventory requires an understanding of the relationship of ending inventory with cost of goods sold. Review the following cost of goods sold calculations.

| *Cost of Goods Sold:* | |
|---|---|
| Opening Inventory | $ 4,000 |
| Purchases | 12,000 |
| Cost of Goods Available for Sale | $16,000 |
| *Less:* Estimated Ending Inventory | ? |
| Cost of Goods Sold | $10,000 |

How much of the $16,000 of goods that the company had available to sell is still not sold at December 31 (in other words, what is ending inventory)? You can calculate this as:

| | |
|---|---|
| Available for sale | $16,000 |
| Less inventory that was sold | 10,000 |
| Equals what must still be on hand | $ 6,000 |

| *Cost of Goods Sold:* | |
|---|---|
| Opening Inventory | $ 4,000 |
| Purchases | 12,000 |
| Cost of Goods Available for Sale | $16,000 |
| *Less:* Estimated Ending Inventory | 6,000 |
| Cost of Goods Sold | ? |

How much of the $16,000 of goods that were available to be sold have been sold? You use the dollar amount of ending inventory to calculate this, as:

| | |
|---|---|
| Available for sale | $16,000 |
| Less inventory on hand | 6,000 |
| Equals what must have been sold | $10,000 |

The sum of cost of goods sold and ending inventory is always equal to cost of goods available for sale. Knowing any two of these amounts enables the third amount to be calculated. Understanding this relationship is the key to estimating inventory using either the gross profit or retail inventory methods, discussed below.

## Gross Profit Method

The **gross profit method** of estimating ending inventory assumes that the percentage of gross profit on sales remains approximately the same from period to period. Therefore, if the gross profit percentage is known, the dollar amount of ending inventory can be estimated. First, gross profit is estimated by applying the gross profit percentage to sales. From this, cost of goods sold can be derived, namely the difference between sales and gross profit. Cost of goods available for sale can be determined from the accounting records (opening inventory + purchases). The difference between cost of goods available for sale and cost of goods sold is the estimated value of ending inventory.

To demonstrate, assume that Pete's Products Ltd. has an average gross profit percentage of 40%. If opening inventory at January 1, 2023 was $200, sales for the six months ended June 30, 2023 were $2,000, and inventory purchased during the six months ended June 30, 2023 was $1,100, the cost of goods sold and ending inventory can be estimated as follows.

| | *Six Months Ended June 30, 2023* |
|---|---|
| Sales (given) | $2,000 |
| *Cost of Goods Sold:* | |
| Opening Inventory (given) | $ 200 |
| Purchases (given) | 1,100 |
| Cost of Goods Available for Sale | 1,300 |
| *Less:* Estimated Ending Inventory | (100) |
| Cost of Goods Sold | 1,200 |
| Gross Profit | $ 800 |

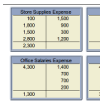
Step 3: Ending inventory can be estimated ($1,300-1,200=100).

Step 2: Cost of goods sold can be derived ($2,000-800=$1,200).

Step 1: Gross profit is estimated at $800 ($2,000 x 40%).

The estimated ending inventory at June 30 must be $100—the difference between the cost of goods available for sale and cost of goods sold.

The gross profit method of estimating inventory is useful in situations when goods have been stolen or destroyed by fire or when it is not cost-effective to make a physical inventory count.

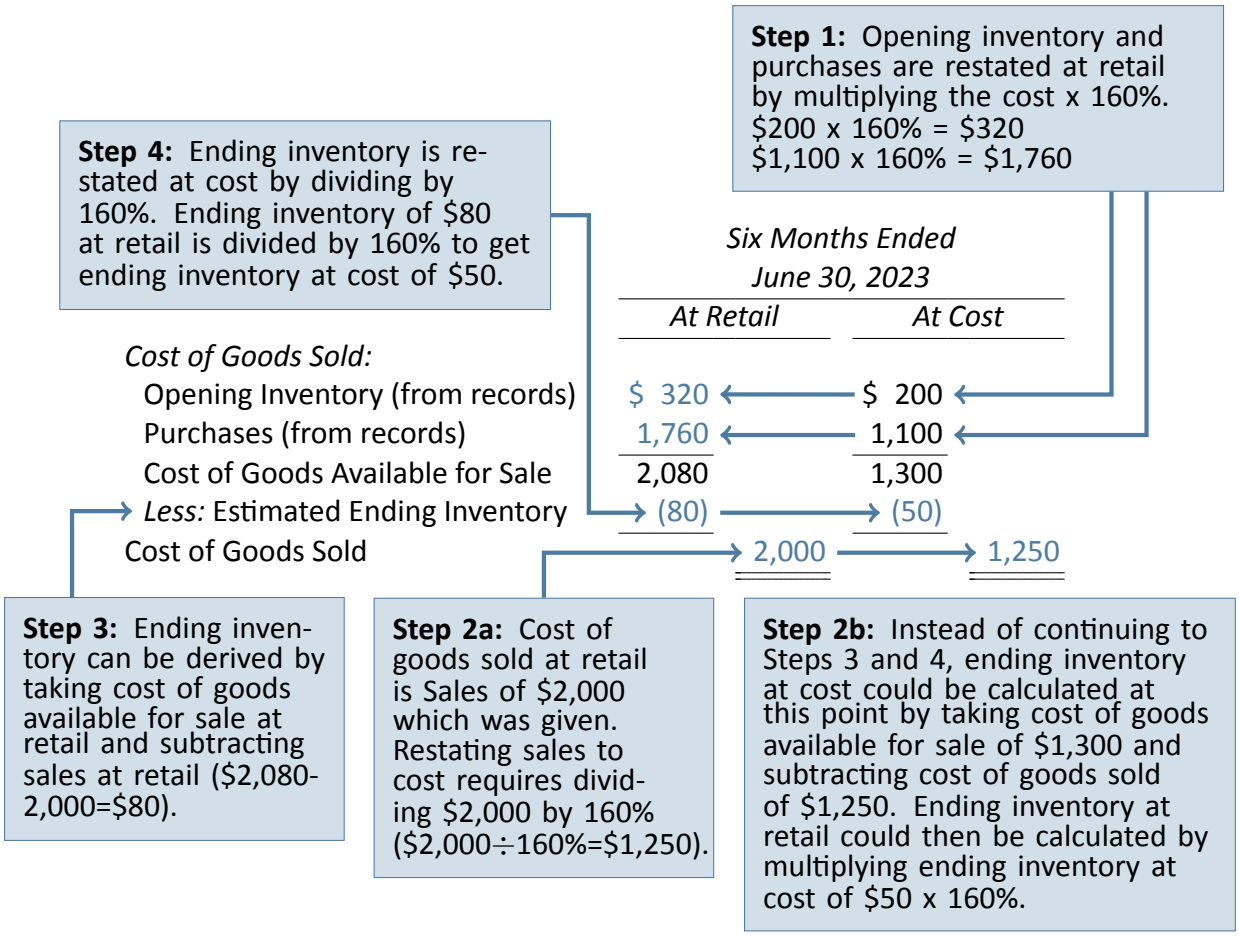


An exploration is available on the Lyryx site. Log into your Lyryx course to run Gross Profit Method.

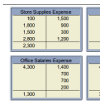
## Retail Inventory Method

The **retail inventory method** is another way to estimate cost of goods sold and ending inventory. It can be used when items are consistently valued at a known percentage of cost, known as a *mark-up*. A **mark-up** is the ratio of retail value (or selling price) to cost. For example, if an inventory item had a retail value of $12 and a cost of $10, then it was marked up to 120% (12/10 x 100). Mark-ups are commonly used in clothing stores.

To apply the retail inventory method using the mark-up percentage, the cost of goods available for sale is first converted to its retail value (the selling price). To do this, the mark-up (ratio of retail to cost) must be known. Assume the same information as above for Pete's Products Ltd., except that now every item in the store is marked up to 160% of its purchase price. That is, if an item is purchased for $100, it is sold for $160. Based on this, opening inventory, purchases, and cost of goods available can be restated at retail. Cost of goods sold can then be valued at retail, meaning that it will equal sales for the period. From this, ending inventory at retail can be determined and then converted back to cost using the mark-up. These steps are illustrated below.




The retail inventory method of estimating ending inventory is easy to calculate and produces a relatively accurate cost of ending inventory, provided that no change in the average mark-up has occurred during the period.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Retail Inventory Method.

## 6.5 Appendix A: Ratio Analysis—Merchandise Inventory Turnover

LO5 – Explain and calculate merchandise inventory turnover.

To help determine how quickly a company is able to sell its inventory, the **merchandise inventory turnover** can be calculated as:

**Cost of Goods Sold ÷ Average Merchandise Inventory**

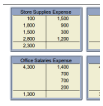
The average merchandise inventory is the beginning inventory plus the ending inventory divided by two. For example, assume Company A had cost of goods sold of $3,000; beginning merchandise inventory of $500; and ending inventory of $700. The merchandise inventory turnover would be 5, calculated as:

| Cost of Goods Sold | ÷ | Average Merchandise Inventory |
|---|---|---|
| $3,000 | ÷ | (($500+$700)/2) |

The '5' means that Company A sold its inventory 5 times during the year. In contrast, assume Company B had cost of goods sold of $3,000; beginning merchandise inventory of $1,000; and ending inventory of $1,400. The merchandise inventory turnover would be 2.50 calculated as:

| Cost of Goods Sold | ÷ | Average Merchandise Inventory |
|---|---|---|
| $3,000 | ÷ | (($1,000+$1,400)/2) |

The '2.5' means that Company B sold its inventory 2.5 times during the year which is much slower than Company A. The faster a business sells its inventory, the better, because high turnover positively affects *liquidity*. **Liquidity** is the ability to convert assets, such as merchandise inventory, into cash. Therefore, Company A's merchandise turnover is more favourable than Company B's.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Using the Information - Merchandise Turnover.

## 6.6 Appendix B: Inventory Cost Flow Assumptions Under the Periodic System

LO6 – Calculate cost of goods sold and merchandise inventory using specific identification, first-in first-out (FIFO), and weighted average cost flow assumptions periodic.

Recall from Chapter 5 that the periodic inventory system does not maintain detailed records to calculate cost of goods sold each time a sale is made. Rather, when a sale is made, the following entry is made:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Accounts Receivable . . . . . | | XX | |
| | Sales . . . . . | | | XX |
| | To record a credit sale. | | | |

No entry is made to record cost of goods sold and to reduce Merchandise Inventory, as is done under the perpetual inventory system. Instead, all purchases are expenses and recorded in the general ledger account "Purchases." A physical inventory count is conducted at year-end. An amount for ending inventory is calculated based on this count and the valuation of the items in inventory, and cost of goods sold is calculated in the income statement based on this total amount. The income statement format is:

| | | |
|---|---|---|
| Sales | | $10,000 |
| *Cost of Goods Sold:* | | |
| Opening Inventory | $ 1,000 | |
| Purchases | 5,000 | |
| Goods Available for Sale | 6,000 | |
| *Less:* Ending Inventory | (2,000) | |
| Cost of Goods Sold | | 4,000 |
| Gross Profit | | $6,000 |

Even under the periodic inventory system, however, inventory cost flow assumptions need to be made (specific identification, FIFO, weighted average) when purchase prices change over time, as in a period of inflation. Further, different inventory cost flow assumptions produce different cost of goods sold and ending inventory values, just as they did under the perpetual inventory system. These effects have been explained earlier in this chapter. *Under the periodic inventory system, cost of goods sold and ending inventory values are determined as if the sales for the period all take place at the end of the period.* These calculations were demonstrated in our earliest example in this chapter.

Our original example using units assumed there was no opening inventory at June 1, 2023 and that purchases were made as follows.

| | *Purchase Transaction* | |
|---|---|---|
| *Date* | *Number of units* | *Price per unit* |
| June 1 | 1 | $1 |
| 5 | 1 | 2 |
| 7 | 1 | 3 |
| 21 | 1 | 4 |
| 28 | 1 | 5 |
| | 5 | $15 |

When recorded in the general ledger T-account "Purchases" (an income statement account), these transactions would be recorded as follows.

| *Purchases* | | No. 570 |
|---|---|---|
| Jun. 1 | $1 | |
| 5 | 2 | |
| 7 | 3 | |
| 21 | 4 | |
| 28 | 5 | |

Sales of four units are all assumed to take place on June 30. Ending inventory would then be counted at the end of the day on June 30. One unit should be on hand. It would be valued as follows under the various inventory cost flow assumptions, as discussed in the first part of the chapter:

| | |
|---|---|
| Specific identification | $4 |
| FIFO | 5 |
| Weighted average | 3 |

These values would be used to calculate cost of goods sold and gross profit on the income statement, as shown in Figure 6.16 below:

| | *Spec. Ident.* | *FIFO* | *Wtd. Avg.* |
|---|---|---|---|
| Sales | $40 | $40 | $40 |
| *Cost of Goods Sold:* | | | |
| Opening Inventory | -0- | -0- | -0- |
| Purchases | 15 | 15 | 15 |
| Goods Available for Sale | 15 | 15 | 15 |
| *Less:* Ending Inventory | (4) | (5) | (3) |
| Cost of Goods Sold | 11 | 10 | 12 |
| Gross Profit and Net Income | $29 | $30 | $28 |
| Ending Inventory (Balance Sheet) | $ 4 | $ 5 | $ 3 |

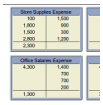
**Figure 6.16: Effects of Different Cost Flow Assumptions: Periodic Inventory System**

Note that these results are the same as those calculated using the perpetual inventory method and assuming all sales take place on June 30 using specific identification (Figure 6.2), FIFO (Figure 6.3), and weighted average (Figure 6.4) cost flow assumptions, respectively.

As discussed in the appendix to Chapter 5, the ending inventory amount will be recorded in the accounting records when the income statement accounts are closed to the Income Summary at the end of the year. The amount of the closing entry for ending inventory is obtained from the income statement. Using the example above and assuming no other revenue or expense items, the closing entry to adjust ending inventory to actual under each inventory cost flow assumption would be as follows.

| | *Specific Identification* | *FIFO* | *Weighted Average* |
|---|---|---|---|
| Merchandise Inventory (ending) | 4 | 5 | 3 |
| Sales | 40 | 40 | 40 |
| Income Summary | 44 | 45 | 43 |

*To close all income statement accounts with credit balances to the Income Summary and record ending inventory balance.*



An exploration is available on the Lyryx site. Log into your Lyryx course to run Assigning Costs to Inventory - Periodic System.

## Summary of Chapter 6 Learning Objectives

### LO1 – Calculate cost of goods sold and merchandise inventory using specific identification, first-in first-out (FIFO), and weighted average cost flow assumptions—perpetual.

Cost of goods available for sale must be allocated between cost of goods sold and ending inventory using a cost flow assumption. Specific identification allocates cost to units sold by using the actual cost of the specific unit sold. FIFO (first-in first-out) allocates cost to units sold by assuming the units sold were the oldest units in inventory. Weighted average allocates cost to units sold by calculating a weighted average cost per unit at the time of sale.

### LO2 – Explain the impact on financial statements of inventory cost flows and errors.

As purchase prices change, particular inventory methods will assign different cost of goods sold and resulting ending inventory to the financial statements. Specific identification achieves the exact matching of revenues and costs while weighted average accomplishes an averaging of price changes, or smoothing. The use of FIFO results in the current cost of inventory appearing on

the balance sheet in ending inventory. The cost flow method in use must be disclosed in the notes to the financial statements and be applied consistently from period to period. An error in ending inventory in one period impacts the balance sheet (inventory and equity) and the income statement (COGS and net income) for that accounting period and the next. However, inventory errors in one period reverse themselves in the next.

### LO3 – Explain and calculate lower of cost and net realizable value inventory adjustments.

Inventory must be evaluated, at minimum, each accounting period to determine whether the net realizable value (NRV) is lower than cost, known as the lower of cost and net realizable value (LCNRV) of inventory. An adjustment is made if the NRV is lower than cost. LCNRV can be applied to groups of similar items or by item.

### LO4 – Estimate merchandise inventory using the gross profit method and the retail inventory method.

Estimating inventory using the gross profit method requires that estimated cost of goods sold be calculated by, first, multiplying net sales by the gross profit ratio. Estimated ending inventory at cost is then arrived at by taking goods available for sale at cost less the estimated cost of goods sold. To apply the retail inventory method, three calculations are required:

- retail value of goods available for sale less retail value of net sales equals retail value of ending inventory,
- goods available for sale at cost divided by retail value of goods available for sale equals cost to retail ratio, and
- retail value of ending inventory multiplied by the cost to retail ratio equals estimated cost of ending inventory.

### LO5 – Explain and calculate merchandise inventory turnover.

The merchandise turnover is a liquidity ratio that measures how quickly inventory is sold. It is calculated as: COGS/Average Merchandise Inventory. Average merchandise inventory is the beginning inventory balance plus the ending inventory balance divided by two.

**LO6 – Calculate cost of goods sold and merchandise inventory using specific identification, first-in first-out (FIFO), and weighted average cost flow assumptions—periodic.**

Periodic systems assign cost of goods available for sale to cost of goods sold and ending inventory at the end of the accounting period. Specific identification and FIFO give identical results in each of periodic and perpetual. The weighted average cost, periodic, will differ from its perpetual counterpart because in periodic, the average cost per unit is calculated at the end of the accounting period based on total goods that were available for sale.

## Discussion Questions

1. Explain the importance of maintaining appropriate inventory levels for
   **a.** management; and
   **b.** investors and creditors.
2. What aspects of accounting for inventory on financial statements would be of interest to accountants?
3. What is meant by the laid-down cost of inventory?
4. How does a flow of goods differ from a flow of costs? Do generally accepted accounting principles require that the flow of costs be similar to the movement of goods? Explain.
5. What two factors are considered when costing merchandise for financial statement purposes? Which of these factors is most difficult to determine? Why?
6. Why is consistency in inventory valuation necessary? Does the application of the consistency principle preclude a change from weighted average to FIFO? Explain.
7. The ending inventory of CBCA Inc. is overstated by $5,000 at December 31, 2022. What is the effect on 2022 net income? What is the effect on 2023 net income assuming that no other inventory errors have occurred during 2023?
8. When should inventory be valued at less than cost?
9. What is the primary reason for the use of the LCNRV method of inventory valuation? What does the term net *realisable value* mean?
10. When inventory is valued at LCNRV, what does cost refer to?
11. What inventory cost flow assumptions are permissible under GAAP?
12. Why is estimating inventory useful?

13. How does the estimation of ending inventory differ between the gross profit method and the retail inventory method? Use examples to illustrate.
14. When is the use of the gross profit method particularly useful?
15. Does the retail inventory method assume any particular inventory cost flow assumption?

## Exercises

---

**EXERCISE 6–1 (LO1)** Watch video

Laplante Inc. uses the perpetual inventory system. The following transactions took place during January 2023.

| *Date* | | *Units* | *Unit Cost* |
|---|---|---|---|
| Jan. 1 | Opening Inventory | 100 | $1 |
| 7 | Purchase #1 | 10 | 2 |
| 9 | Sale #1 | 80 | |
| 21 | Purchase #2 | 20 | 3 |
| 24 | Sale #2 | 40 | |

**Required**: Using the table below, calculate cost of goods sold for the January 9 and 24 sales, and ending inventory using the FIFO cost flow assumption.

| | | *Purchased (Sold)* | | | *Balance* | | | | |
|---|---|---|---|---|---|---|---|---|---|
| *Date* | | *Units* | *Unit Cost* | *COGS* | *Units* | | *Unit Cost* | | *Total Cost* |
| Jan. 1 | Opening Inventory | | | | 100 | × | $1 | = | $100 |
| 7 | Purchase #1 | | | | | | | | |
| 9 | Sale #1 | | | | | | | | |
| 21 | Purchase #2 | | | | | | | | |
| 24 | Sale #2 | | | | | | | | |

**EXERCISE 6–2 (LO1)** Watch video

Using the information from EXERCISE 6–1, calculate the cost of goods sold for the January 9 and 24 sales, and ending inventory using the Specific Identification cost flow assumption. Assume that:

i. on January 9, the specific units sold were 72 units from opening inventory and 8 units from the January 7 purchase and

ii. the specific units sold on January 24 were 23 units from opening inventory and 17 units from the January 21 purchase.

**EXERCISE 6–3 (LO1)** Watch video

ABBA uses the weighted average inventory cost flow assumption under the perpetual inventory system. The following transactions took place in January 2023.

| *Date* | | *Units* | *Unit Selling Price/ Cost* |
|---|---|---|---|
| Jan. 1 | Opening Inventory | 2,000 | $0.50 |
| 5 | Sale #1 | 1,200 | 5.00 |
| 6 | Purchase #1 | 1,000 | 2.00 |
| 10 | Purchase #2 | 500 | 1.00 |
| 16 | Sale #2 | 2,000 | 6.00 |
| 21 | Purchase #3 | 1,000 | 2.50 |

All sales are made on account. Round all per unit costs to two decimal places.

**Required**:

**a.** Record the journal entry for the January 5 sale. Show calculations for cost of goods sold.

**b.** Record the journal entry for the January 16 sale. Show calculations for cost of goods sold.

**c.** Calculate ending inventory in units, cost per unit, and total cost.

**EXERCISE 6–4 (LO2)**

Listed below are four common accounting errors.

| | *2022 Statements* | | | | *2023 Statements* | | | |
|---|---|---|---|---|---|---|---|---|
| *Errors* | *Opening Invent.* | *Ending Invent.* | *2022 Total Assets* | *2022 Net Income* | *Opening Invent.* | *Ending Invent.* | *2023 Total Assets* | *2023 Net Income* |
| 1. Goods purchased in 2022 were included in the December 31, 2022 inventory, but the transaction was not recorded until early 2023. | N/E | | | | | | | |
| 2. Goods purchased in 2023 were included in December 31, 2022 inventory, and the transaction was recorded in 2022. | N/E | | | | | | | |

**Required**: Use N/E (No Effect), O (Overstated), or U (Understated) to indicate the effect of each error on the company's financial statements for the years ended December 31, 2022 and December 31, 2023. The opening inventory for the 2022 statements is done.

**EXERCISE 6–5 (LO2)**

Partial income statements of Lilydale Products Inc. are reproduced below:

| | *2021* | *2022* | *2023* |
|---|---|---|---|
| Sales | $30,000 | $40,000 | $50,000 |
| Cost of Goods Sold | 20,000 | 23,000 | 25,000 |
| Gross Profit | $10,000 | $17,000 | $25,000 |

**Required**:

**a.** Calculate the impact of the two errors listed below on the gross profit calculated for the three years:

i. The 2021 ending inventory was understated by $2,000.

ii. The 2023 ending inventory was overstated by $5,000.

**b.** What is the impact of these errors on Total Assets?

---

**EXERCISE 6–6 (LO3)**

Erndale Products Ltd. has the following items in inventory at year-end:

| *Item* | *Units* | *Cost/Unit* | *NRV/Unit* |
|---|---|---|---|
| X | 2 | $50 | $60 |
| Y | 3 | 150 | 75 |
| Z | 4 | 25 | 20 |

**Required**: Calculate the cost of ending inventory using LCNRV on

**a.** A unit-by-unit basis

**b.** A group inventory basis.

---

**EXERCISE 6–7 (LO4)**

Windy City Insurance Ltd. has received a fire-loss claim of $45,000 from Balton Corp. A fire destroyed Balton's inventory on May 25, 2023. Balton has an average gross profit of 35%. You have obtained the following information:

| | |
|---|---|
| Inventory, May 1, 2023 | $ 80,000 |
| Purchases, May 1 - May 25 | 150,000 |
| Sales, May 1 - May 25 | 300,000 |

**Required**:

**a.** Calculate the estimated amount of inventory lost in the fire.

**b.** How reasonable is Balton's claim?

**EXERCISE 6–8 (LO5)**

The following account balances for Cost of Goods Sold and Merchandise Inventory were extracted from Able Corp.'s accounting records:

| | *2025* | *2024* | *2023* | *2022* | *2021* |
|---|---|---|---|---|---|
| Cost of Goods Sold | 370,000 | 400,000 | 420,000 | 440,000 | 450,000 |
| Merchandise Inventory | 120,000 | 111,250 | 88,750 | 111,250 | 88,750 |

**Required**:

**a.** Calculate the Merchandise Inventory Turnover for each of the years 2022 to 2025.

**b.** Is the change in Able Corp.'s Merchandise Inventory Turnover ratio favourable or unfavourable? Explain.

## Problems

**PROBLEM 6–1 (LO1)**

Southern Cross Company Limited made the following purchases and sales of Products A and B during the year ended December 31, 2023:

*Product A*

| | | *Units* | *Unit Cost/ Selling Price* |
|---|---|---|---|
| Jan. 07 | Purchase #1 | 8,000 | $12.00 |
| Mar. 30 | Sale #1 | 9,000 | 16.00 |
| May 10 | Purchase #2 | 12,000 | 12.10 |
| Jul. 04 | Sale #2 | 14,000 | 17.00 |

*Product B*

| | | *Units* | *Unit Cost/ Selling Price* |
|---|---|---|---|
| Jan. 13 | Purchase #1 | 5,000 | $13.81 |
| Jul. 15 | Sale #1 | 1,000 | 20.00 |
| Oct. 23 | Purchase #2 | 7,000 | 14.21 |
| Dec. 14 | Sale #2 | 8,000 | 21.00 |

Opening inventory at January 1 amounted to 4,000 units at $11.90 per unit for Product A and 2,000 units at $13.26 per unit for Product B.

**Required**:

1. Prepare inventory record cards for Products A and B for the year using the weighted average inventory cost flow assumption.
2. Calculate total cost of ending inventory at December 31, 2023.
3. Calculate the gross profit percentage earned on the sale of
    i. Product A in 2023 and
    ii. Product B in 2023.

---

**PROBLEM 6–2 (LO1) Challenge Question – Assigning Costs to Inventory**

Below are various inventory related transactions:

| | | | | | | |
|---|---|---|---|---|---|---|
| Jan 1 | Inventory, opening | 500 units | @ | $10 | = | $5,000 |
| 4 | Sale | 100 units | @ | $20 | = | 2,000 |
| 6 | Purchase | 200 units | @ | $11 | = | 2,200 |
| 8 | Purchase return (from Jan 6 purchase) | (10) units | @ | $11 | = | (110) |
| 9 | Sale | 200 units | @ | $22 | = | 4,400 |
| 10 | Sales return from customer from Jan 4 sale (returned to inventory) | (15) units | @ | $22 | = | (330) |
| 15 | Sale | 150 units | @ | $23 | = | 3,450 |
| 17 | Purchase | 300 units | @ | $9 | = | 2,700 |
| 19 | Sales return from customer from Jan 15 sale (beyond repair, disposed) | (2) units | | $23 | = | (46) |
| 20 | Sale | 400 units | @ | $21 | = | 2,100 |

**Required**:

1. Complete an inventory record card (schedule) the same as the example shown in Figure 6.9 of the text and with totals at the bottom. Assume that the FIFO method was used.
2. Calculate the gross profit and the gross profit percentage.
3. What is the ending inventory balance at January 20, 2023?

---

**PROBLEM 6–3 (LO1) Assigning Costs to Inventory**

Below are various inventory related transactions:

**Purchases:**

| | | |
|---|---|---|
| Feb 1 | Opening inventory | 75 units @ $12 |
| Feb 7 | Purchase | 300 units @ $11 |
| Feb 14 | Purchase return from Feb 7 | 10 units @ $11 |
| Feb 19 | Purchase | 400 units @ $9 |

Sales Price: $24.00

**Units Sold:**

| | |
|---|---|
| Feb 5 | 70 units |
| Feb 12 | 180 units |
| Feb 17 | 100 units |
| Feb 23 | 80 units |

**Required**:

1. Complete an inventory record card (schedule) the same as the example shown in Figure 6.9 of the text and with totals at the bottom. Assume that a weighted average cost method was used. Round unit costs to the nearest two decimals.
2. Calculate the gross profit and the gross profit percentage.
3. What is the ending inventory balance at February 23, 2023?

---

**PROBLEM 6–4 (LO2) Inventory Errors**

The following table shows the following financial data for AAA Ltd. for the year ended December 31, 2023:

Financial Data
For the year ended December 31, 2023

| | **2022** | **2023** |
|---|---|---|
| Cost of goods sold | $ 500,000 | $ 660,000 |
| Net income | 250,000 | 350,000 |
| Total assets | 1,500,000 | 1,400,000 |
| Equity | 1,400,000 | 1,300,000 |

The following errors were made:

The inventory count for 2022 was overstated by $45,000.

**Required**: Calculate the corrected cost of goods sold, net income, total assets and equity for 2022 and 2023.

---

**PROBLEM 6–5 (LO2) Inventory Errors**

Using the data from PROBLEM 6–4, the following table shows the following financial data for AAA Ltd. for the year ended December 31, 2023:

Financial Data
For the year ended December 31, 2023

| | 2022 | 2023 |
|---|---|---|
| Cost of goods sold | $ 500,000 | $ 660,000 |
| Net income | 250,000 | 350,000 |
| Total assets | 1,500,000 | 1,400,000 |
| Equity | 1,400,000 | 1,300,000 |

The following errors were made:

The inventory count for 2022 was understated by $30,000.

**Required**: Calculate the corrected cost of goods sold, net income, total assets and equity for 2022 and 2023.

---

**PROBLEM 6–6 (LO3) Lower of Cost and Net Realizable Value**

Below are the inventory details for Almac Flooring Ltd.:

| Ceramic Wall Tiles: | # of Units | Cost/Unit | NRV/Unit |
|---|---|---|---|
| White | 1,025 | 5.00 | 6.00 |
| Black | 875 | 4.50 | 4.25 |
| Slate | 645 | 7.00 | 7.11 |
| Beige | 325 | 2.00 | 2.25 |
| Marble Flooring: | | | |
| Cordoba | 10,000 | 9.25 | 9.35 |
| Carrerra | 12,000 | 10.50 | 10.50 |
| Maricha | 8,000 | 11.50 | 11.45 |
| Shower Waterproofing: | | | |
| Novo | 10,035 | 9.85 | 9.50 |
| Deetra | 9.86 | 6.75 | 7.15 |

**Required**:

1. Calculate the LCNRV for each group.
2. Calculate the LCNRV for each individual product.

3. Prepare the adjusting entries if any for parts (1) and (2).

---

**PROBLEM 6–7 (LO4) Estimating Inventory and Valuation – Gross Profit Method**

Varane Ltd. is required to submit an interim financial statement to their bank as part of the line-of-credit monitoring process. Below is information regarding their first quarter business for 2024:

| | |
|---|---|
| Ending inventory from the previous year | $420,364 |
| Purchases | 1,323,280 |
| Purchase returns | 18,270 |
| Transportation-in | 9,660 |
| Freight-out | 2,300 |
| Sales | 1,667,610 |
| Sales returns | 13,230 |
| Operating expenses | 130,500 |
| 3-year rolling average gross profit | 34% |
| Income tax rate | 30% |

**Required**:

1. Prepare a schedule of calculations to estimate the company's ending inventory at the end of the quarter using the gross profit method.
2. Prepare a multiple-step income statement for the first quarter ending March 31, 2024.

---

**PROBLEM 6–8 (LO4) Estimating Inventory and Valuation – Retail Inventory Method**

Ceabane Ltd. is required to submit an interim financial statement to their creditors. Below is information regarding their first six months for 2024:

| | At Cost | At Retail |
|---|---|---|
| Ending inventory from the previous year | $659,890 | $1,298,010 |
| Purchases | 4,660,362 | 8,958,180 |
| Purchase returns | 73,920 | 167,090 |
| Sales | | 7,693,980 |
| Sales returns | | 62,440 |
| Additional information: | | |
| Operating expenses | $1,500,000 | |
| Income tax rate | 30% | |

**Required**:

1. Prepare a schedule of calculations to estimate the company's ending inventory at the end of the quarter using the retail inventory method.
2. Prepare a multiple-step income statement for the first six months ending June 30, 2024.

---

**PROBLEM 6–9 (LO2)**

Partial income statements of Schneider Products Inc. are reproduced below:

| | *2023* | *2024* |
|---|---|---|
| Sales | $50,000 | $50,000 |
| Cost of Goods Sold | 20,000 | 23,000 |
| Gross Profit | $30,000 | $27,000 |

The 2023 ending inventory was overstated by $2,000 during the physical count. The 2024 physical inventory count was done properly.

**Required**:

1. Calculate the impact of this error on the gross profit calculated for 2023 and 2024.
2. What is the impact of this error on total assets at the end of 2023 and 2024? Net assets?

**PROBLEM 6–10 (LO3)**

Reflex Corporation sells three products. The inventory valuation of these products is shown below for years 2022 and 2023.

| | *2022* | | | *2023* | | |
|---|---|---|---|---|---|---|
| | *Cost* | *Market* | *Unit Basis (LCNRV)* | *Cost* | *Market* | *Unit Basis (LCNRV)* |
| Product X | $14,000 | $15,000 | ? | $15,000 | $16,000 | ? |
| Product Y | 12,500 | 12,000 | ? | 12,000 | 11,500 | ? |
| Product Z | 11,000 | 11,500 | ? | 10,500 | 10,000 | ? |
| Total | ? | ? | ? | ? | ? | ? |

**Required**: If Reflex values its inventory using LCNRV/unit basis, complete the 2022 and 2023 cost, net realizable value, and LCNRV calculations.

# Chapter 7

# Cash and Receivables

This chapter focuses on the current assets of cash and receivables. Internal control over cash involves processes and procedures that include the use of a petty cash fund and the preparation of a bank reconciliation. Receivables can be determined to be uncollectible. To match the cost of uncollectible accounts and the related revenue, uncollectible accounts, more commonly referred to as bad debts, must be estimated. Bad debts are accounted for using the allowance approach, applied using either the income statement method or balance sheet method. When uncollectible accounts are specifically identified, they are written off. Write-offs can be subsequently recovered. The journalizing of short-term notes receivable and related interest revenue is also discussed in this chapter. To help in the analysis of cash and receivables, two ratios are introduced: the acid-test and accounts receivable turnover.

## Chapter 7 Learning Objectives

LO1 – Define internal control and explain how it is applied to cash.

LO2 – Explain and journalize petty cash transactions.

LO3 – Explain the purpose of and prepare a bank reconciliation, and record related adjustments.

LO4 – Explain, calculate, and record estimated uncollectible accounts receivable and subsequent write-offs and recoveries.

LO5 – Explain and record a short-term notes receivable as well as calculate related interest.

LO6 – Explain and calculate the acid-test ratio.

LO7 – Explain and calculate the accounts receivable turnover.

## Concept Self-Check

Use the following as a self-check while working through Chapter 7.

1. What constitutes a good system of control over cash?

2. What is a petty cash system and how is it used to control cash?
3. How is petty cash reported on the balance sheet?
4. How does the preparation of a bank reconciliation facilitate control over cash?
5. What are the steps in preparing a bank reconciliation?
6. How does the estimation of uncollectible accounts receivable address the GAAP of matching?
7. How are uncollectible accounts disclosed on financial statements?
8. What are the different methods used for estimating uncollectible accounts receivable?
9. How is aging of accounts receivable used in estimating uncollectible accounts?
10. How are notes receivable recorded?
11. What is the acid-test ratio and how is it calculated?
12. How is the accounts receivable turnover calculated and what does it mean?

**NOTE:** The purpose of these questions is to prepare you for the concepts introduced in the chapter. Your goal should be to answer each of these questions as you read through the chapter. If, when you complete the chapter, you are unable to answer one or more the Concept Self-Check questions, go back through the content to find the answer(s). Solutions are not provided to these questions.

## 7.1 Internal Control

LO1 – Define internal control and explain how it is applied to cash.

Assets are the lifeblood of a company. As such, they must be protected. This duty falls to managers of a company. The policies and procedures implemented by management to protect assets are collectively referred to as **internal controls**. An effective internal control program not only protects assets, but also aids in accurate recordkeeping, produces financial statement information in a timely manner, ensures compliance with laws and regulations, and promotes efficient operations. Effective internal control procedures ensure that adequate records are maintained, transactions are authorized, duties among employees are divided between recordkeeping functions and control of assets, and employees' work is checked by others. The use of electronic recordkeeping systems does not decrease the need for good internal controls.

The effectiveness of internal controls is limited by human error and fraud. Human error can occur because of negligence or mistakes. Fraud is the intentional decision to circumvent internal control systems for personal gain. Sometimes, employees cooperate in order to avoid internal controls. This *collusion* is often difficult to detect, but fortunately, it is not a common occurrence when adequate controls are in place.

Internal controls take many forms. Some are broadly based, like mandatory employee drug testing, video surveillance, and scrutiny of company email systems. Others are specific to a particular type of asset or process. For instance, internal controls need to be applied to a company's accounting system to ensure that transactions are processed efficiently and correctly to produce reliable records in a timely manner. Procedures should be documented to promote good recordkeeping, and employees need to be trained in the application of internal control procedures.

Financial statements prepared according to generally accepted accounting principles are useful not only to external users in evaluating the financial performance and financial position of the company, but also for internal decision making. There are various internal control mechanisms that aid in the production of timely and useful financial information. For instance, using a chart of accounts is necessary to ensure transactions are recorded in the appropriate account. As an example, expenses are classified and recorded in applicable expense accounts, then summarized and evaluated against those of a prior year.

The design of accounting records and documents is another important means to provide financial information. Financial data is entered and summarized in records and transmitted by documents. A good system of internal control requires that these records and documents be prepared at the time a transaction takes place or as soon as possible afterward, since they become less credible and the possibility of error increases with the passage of time. The documents should also be consecutively pre-numbered, to indicate whether there may be missing documents.

Internal control also promotes the protection of assets. Cash is particularly vulnerable to misuse. A good system of internal control for cash should provide adequate procedures for protecting cash receipts and cash payments (commonly referred to as cash disbursements). Procedures to achieve control over cash vary from company to company and depend upon such variables as company size, number of employees, and cash sources. However, effective cash control generally requires the following:

- Separation of duties: People responsible for handling cash should not be responsible for maintaining cash records. By separating the custodial and record-keeping duties, theft of cash is less likely.
- Same-day deposits: All cash receipts should be deposited daily in the company's bank account. This prevents theft and personal use of the money before deposit.
- Payments made using non-cash means: Cheques or electronic funds transfer (EFT) provide a separate external record to verify cash disbursements. For example, many businesses pay

their employees using electronic funds transfer because it is more secure and efficient than using cash or even cheques.

Two forms of internal control over cash will be discussed in this chapter: the use of a petty cash account and the preparation of bank reconciliations.

## 7.2 Petty Cash

LO2 – Explain and journalize petty cash transactions.

The payment of small amounts by cheque may be inconvenient and costly. For example, using cash to pay for postage on an incoming package might be less than the total processing cost of a cheque. A small amount of cash kept on hand to pay for small, infrequent expenses is referred to as a **petty cash fund**.

### Establishing and Reimbursing the Petty Cash Fund

To set up the petty cash fund, a cheque is prepared for the amount of the fund. The custodian of the fund cashes the cheque and places the coins and currency in a locked box. Responsibility for the petty cash fund should be delegated to only one person, who should be held accountable for its contents. Cash payments are made by this petty cash custodian out of the fund as required when supported by receipts. When the amount of cash has been reduced to a pre-determined level, the receipts are compiled and submitted for entry into the accounting system. A cheque is then issued to reimburse the petty cash fund. At any given time, the petty cash amount should consist of cash and supporting receipts, all totalling the petty cash fund amount. To demonstrate the management of a petty cash fund, assume that a $200 cheque is issued for the purpose of establishing a petty cash fund.

The journal entry is:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Petty Cash | | 200 | |
| | Cash | | | 200 |
| | To establish the $200 petty cash fund. | | | |

Petty Cash is a current asset account. When reporting Cash on the financial statements, the balances in Petty Cash and Cash are added together and reported as one amount.

Assume the petty cash custodian has receipts totalling $190 and $10 in coin and currency remaining in the petty cash box. The receipts consist of the following: delivery charges $100, $35 for

postage, and office supplies of $55. The petty cash custodian submits the receipts to the accountant who records the following entry and issues a cheque for $190.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Delivery Expense | | 100 | |
| | Postage Expense | | 35 | |
| | Office Supplies Expense[1] | | 55 | |
| | Cash | | | 190 |
| | To reimburse the petty cash fund. | | | |

The petty cash receipts should be cancelled at the time of reimbursement in order to prevent their reuse for duplicate reimbursements. The petty cash custodian cashes the $190 cheque. The $190 plus the $10 of coin and currency in the locked box immediately prior to reimbursement equals the $200 total required in the petty cash fund.

Sometimes, the receipts plus the coin and currency in the petty cash locked box do not equal the required petty cash balance. To demonstrate, assume the same information above except that the coin and currency remaining in the petty cash locked box was $8. This amount plus the receipts for $190 equals $198 and not $200, indicating a shortage in the petty cash box. The entry at the time of reimbursement reflects the shortage and is recorded as:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Delivery Expense | | 100 | |
| | Postage Expense | | 35 | |
| | Office Supplies Expense | | 55 | |
| | Cash Over/Short Expense | | 2 | |
| | Cash | | | 192 |
| | To reimburse the petty cash fund and account for the $2.00 shortage. | | | |

Notice that the $192 credit to Cash plus the $8 of coin and currency remaining in the petty cash box immediately prior to reimbursement equals the $200 required total in the petty cash fund.

Assume, instead, that the coin and currency in the petty cash locked box was $14. This amount plus the receipts for $190 equals $204 and not $200, indicating an overage in the petty cash box. The entry at the time of reimbursement reflects the overage and is recorded as:

[1] An expense is debited instead of Office Supplies, an asset, because the need to purchase supplies through petty cash assumes the immediate use of the items.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Delivery Expense | | 100 | |
| | Postage Expense | | 35 | |
| | Office Supplies Expense | | 55 | |
| | Cash Over/Short Expense | | | 4 |
| | Cash | | | 186 |
| | To reimburse the petty cash fund and account for the $4.00 overage. | | | |

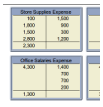
Again, notice that the $186 credit to Cash plus the $14 of coin and currency remaining in the petty cash box immediately prior to reimbursement equals the $200 required total in the petty cash fund.

What happens if the petty cash custodian finds that the fund is rarely used? In such a case, the size of the fund should be decreased to reduce the risk of theft. To demonstrate, assume the petty cash custodian has receipts totalling $110 and $90 in coin and currency remaining in the petty cash box. The receipts consist of the following: delivery charges $80 and postage $30. The petty cash custodian submits the receipts to the accountant and requests that the petty cash fund be reduced by $75. The following entry is recorded and a cheque for $35 is issued.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Delivery Expense | | 80 | |
| | Postage Expense | | 30 | |
| | Petty Cash | | | 75 |
| | Cash | | | 35 |
| | To reimburse the petty cash fund and reduce it by $75. | | | |

The $35 credit to Cash plus the $90 of coin and currency remaining in the petty cash box immediately prior to reimbursement equals the $125 new balance in the petty cash fund ($200 original balance less the $75 reduction).

In cases when the size of the petty cash fund is too small, the petty cash custodian could request an increase in the size of the petty cash fund at the time of reimbursement. Care should be taken to ensure that the size of the petty cash fund is not so large as to become a potential theft issue. Additionally, if a petty cash fund is too large, it may be an indicator that transactions that should be paid by cheque are not being processed in accordance with company policy. Remember that the purpose of the petty cash fund is to pay for infrequent expenses; day-to-day items should not go through petty cash.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Petty Cash.

## 7.3 Cash Collections and Payments

LO3 – Explain the purpose of and prepare a bank reconciliation, and record related adjustments.

The widespread use of banks facilitates cash transactions between entities and provides a safeguard for the cash assets being exchanged. This involvement of banks as intermediaries between entities has accounting implications. At any point in time, the cash balance in the accounting records of a particular company usually differs from the bank cash balance of that company. The difference is usually because some cash transactions recorded in the accounting records have not yet been recorded by the bank and, conversely, some cash transactions recorded by the bank have not yet been recorded in the company's accounting records.

The use of a bank reconciliation is one method of internal control over cash. The reconciliation process brings into agreement the company's accounting records for cash and the **bank statement** issued by the company's bank. A bank reconciliation explains the difference between the balances reported by the company and by the bank on a given date.

A bank reconciliation proves the accuracy of both the company's and the bank's records, and reveals any errors made by either party. The bank reconciliation is a tool that can help detect attempts at theft and manipulation of records. The preparation of a bank reconciliation is discussed in the following section.

### The Bank Reconciliation

The bank reconciliation is a report prepared by a company at a point in time. It identifies discrepancies between the cash balance reported on the bank statement and the cash balance reported in a business's Cash account in the general ledger, more commonly referred to as the *books*. These discrepancies are known as *reconciling items* and are added or subtracted to either the book balance or bank balance of cash. Each of the reconciling items is added or subtracted to the business's cash balance. The business's cash balance will change as a result of the reconciling items. The cash balance prior to reconciliation is called the *unreconciled* cash balance. The balance after adding and subtracting the reconciling items is called the *reconciled* cash balance. The following is a list of potential reconciling items and their impact on the bank reconciliation.

| *Book reconciling items* | *Bank reconciling items* |
|---|---|
| Collection of notes receivable (added) | Outstanding deposits (added) |
| NSF cheques (subtracted) | Outstanding cheques (subtracted) |
| Bank charges (subtracted) | |
| Book errors (added or subtracted, depending on the nature of the error) | Bank errors (added or subtracted, depending on the nature of the error) |

## Book Reconciling Items

The collection of notes receivable may be made by a bank on behalf of the company. These collections are often unknown to the company until they appear as an addition on the bank statement, and so cause the general ledger cash account to be understated. As a result, the collection of a notes receivable is added to the unreconciled book balance of cash on the bank reconciliation.

Cheques returned to the bank because there were not sufficient funds (NSF) to cover them appear on the bank statement as a reduction of cash. The company must then request that the customer pay the amount again. As a result, the general ledger cash account is overstated by the amount of the NSF cheque. NSF cheques must therefore be subtracted from the unreconciled book balance of cash on the bank reconciliation to reconcile cash.

Cheques received by a company and deposited into its bank account may be returned by the customer's bank for a number of reasons (e.g., the cheque was issued too long ago, known as a stale-dated cheque, an unsigned or illegible cheque, or the cheque shows the wrong account number). Returned cheques cause the general ledger cash account to be overstated. These cheques are therefore subtracted on the bank statement, and must be deducted from the unreconciled book balance of cash on the bank reconciliation.

Bank service charges are deducted from the customer's bank account. Since the service charges have not yet been recorded by the company, the general ledger cash account is overstated. Therefore, service charges are subtracted from the unreconciled book balance of cash on the bank reconciliation.

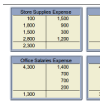
A business may incorrectly record journal entries involving cash. For instance, a deposit or cheque may be recorded for the wrong amount in the company records. These errors are often detected when amounts recorded by the company are compared to the bank statement. Depending on the nature of the error, it will be either added to or subtracted from the unreconciled book balance of cash on the bank reconciliation. For example, if the company recorded a cheque as $520 when the correct amount of the cheque was $250, the $270 difference would be added to the unreconciled book balance of cash on the bank reconciliation. Why? Because the cash balance reported on the books is understated by $270 as a result of the error. As another example, if the company recorded a deposit as $520 when the correct amount of the deposit was $250, the $270 difference would be subtracted from the unreconciled book balance of cash on the bank reconciliation. Why? Because the cash balance reported on the books is overstated by $270 as a result of the error. Each error requires careful analysis to determine whether it will be added or subtracted in the unreconciled book balance of cash on the bank reconciliation.

## Bank Reconciling Items

Cash receipts are recorded as an increase of cash in the company's accounting records when they are received. These cash receipts are deposited by the company into its bank. The bank records an increase in cash only when these amounts are actually deposited with the bank. Since not all cash receipts recorded by the company will have been recorded by the bank when the bank statement is prepared, there will be outstanding deposits, also known as **deposits in transit**. Outstanding deposits cause the bank statement cash balance to be understated. Therefore, outstanding deposits are a reconciling item that must be added to the unreconciled bank balance of cash on the bank reconciliation.

On the date that a cheque is prepared by a company, it is recorded as a reduction of cash in a company's books. A bank statement will not record a cash reduction until a cheque is presented and accepted for payment (or *clears* the bank). Cheques that are recorded in the company's books but are not paid out of its bank account when the bank statement is prepared are referred to as **outstanding cheques**. Outstanding cheques mean that the bank statement cash balance is overstated. Therefore, outstanding cheques are a reconciling item that must be subtracted from the unreconciled bank balance of cash on the bank reconciliation.

Bank errors sometimes occur and are not revealed until the transactions on the bank statement are compared to the company's accounting records. When an error is identified, the company notifies the bank to have it corrected. Depending on the nature of the error, it is either added to or subtracted from the unreconciled bank balance of cash on the bank reconciliation. For example, if the bank cleared a cheque as $520 that was correctly written for $250, the $270 difference would be added to the unreconciled bank balance of cash on the bank reconciliation. Why? Because the cash balance reported on the bank statement is understated by $270 as a result of this error. As another example, if the bank recorded a deposit as $520 when the correct amount was actually $250, the $270 difference would be subtracted from the unreconciled bank balance of cash on the bank reconciliation. Why? Because the cash balance reported on the bank statement is overstated by $270 as a result of this specific error. Each error must be carefully analyzed to determine how it will be treated on the bank reconciliation.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Bank Reconciliation.

## Illustrative Problem—Bank Reconciliation

Assume that a bank reconciliation is prepared by Big Dog Carworks Corp. (BDCC) at April 30. At this date, the Cash account in the general ledger shows a balance of $21,929 and includes the cash receipts and payments shown in Figure 7.1.

Cash — Acct. No. 101

| Date | | Description | Debit | Credit | DR/CR | Balance |
|---|---|---|---|---|---|---|
| 2023 | | | | | | |
| Mar. | 31 | Balance | | | DR | 20673- |
| Apr. | 30 | April cash receipts | 9482- | | DR | 30155- |
| | 30 | April cash payments | | 8226- | DR | 21929- |

Remember, 'DR' (debit) denotes a positive cash balance in the far right-hand column of the general ledger.

**Figure 7.1: Big Dog's General Ledger 'Cash' Account at April 30**

Extracts from BDCC's accounting records are reproduced with the bank statement for April in Figure 7.2.

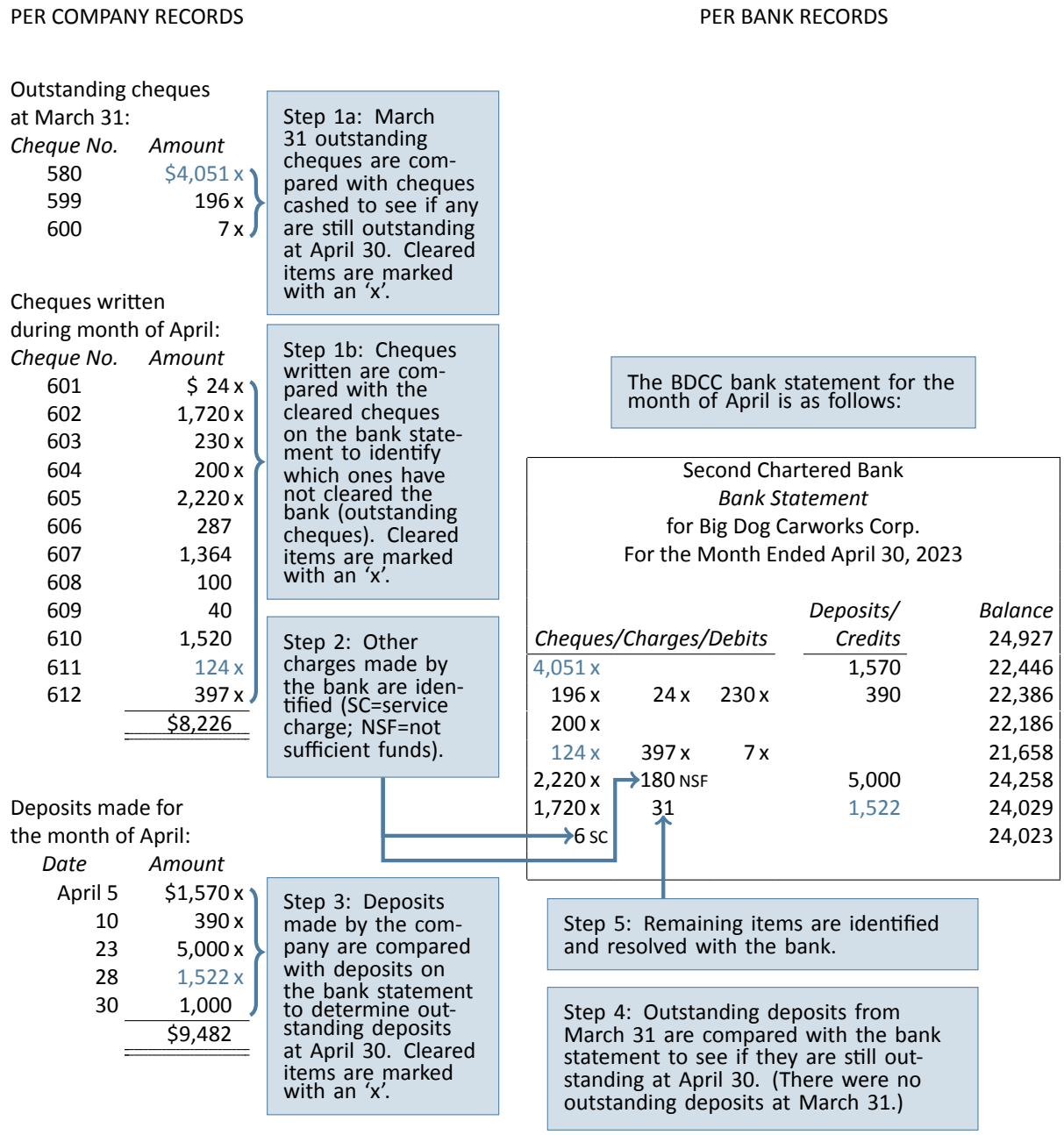



**Figure 7.2: The Bank Reconciliation Process**

For each entry in BDCC's general ledger Cash account, there should be a matching entry on its bank statement. Items in the general ledger Cash account but not on the bank statement must be reported as a reconciling item on the bank reconciliation. For each entry on the bank statement, there should be a matching entry in BDCC's general ledger Cash account. Items on the bank statement but not in the general ledger Cash account must be reported as a reconciling item on the bank reconciliation.

There are nine steps to follow in preparing a bank reconciliation for BDCC at April 30, 2023:

**Step 1**

Identify the ending general ledger cash balance ($21,929 from Figure 7.1) and list it on the bank reconciliation as the book balance on April 30 as shown in Figure 7.3. This represents the unreconciled book balance.

**Step 2**

Identify the ending cash balance on the bank statement ($24,023 from Figure 7.2) and list it on the bank reconciliation as the bank statement balance on April 30 as shown in Figure 7.3. This represents the unreconciled bank balance.

**Step 3**

Cheques written that have cleared the bank are returned with the bank statement. These cheques are said to be *cancelled* because, once cleared, the bank marks them to prevent them from being used again. Cancelled cheques are compared to the company's list of cash payments. Outstanding cheques are identified using two steps:

a. Any outstanding cheques listed on the BDCC's March 31 bank reconciliation are compared to the cheques listed on the April 30 bank statement.

   For BDCC, all of the March outstanding cheques (nos. 580, 599, and 600) were paid by the bank in April. Therefore, there are no reconciling items to include in the April 30 bank reconciliation. If one of the March outstanding cheques had not been paid by the bank in April, it would be subtracted as an outstanding cheque from the unreconciled bank balance on the bank reconciliation.

b. The cash payments listed in BDCC's accounting records are compared to the cheques on the bank statement. This comparison indicates that the following cheques are outstanding.

| *Cheque No.* | *Amount* |
|---|---|
| 606 | $ 287 |
| 607 | 1,364 |
| 608 | 100 |
| 609 | 40 |
| 610 | 1,520 |

   Outstanding cheques must be deducted from the bank statement's unreconciled ending cash balance of $24,023 as shown in Figure 7.3.

**Step 4**

Other payments made by the bank are identified on the bank statement and subtracted from the unreconciled book balance on the bank reconciliation.

a. An examination of the April bank statement shows that the bank had deducted the NSF cheque of John Donne for $180. This is deducted from the unreconciled book balance on the bank reconciliation as shown in Figure 7.3.

b. An examination of the April 30 bank statement shows that the bank had also deducted a service charge of $6 during April. This amount is deducted from the unreconciled book balance on the bank reconciliation as shown in Figure 7.3.

**Step 5**

Last month's bank reconciliation is reviewed for outstanding deposits at March 31. There were no outstanding deposits at March 31. If there had been, the amount would have been added to the unreconciled bank balance on the bank reconciliation.

**Step 6**

The deposits shown on the bank statement are compared with the amounts recorded in the company records. This comparison indicates that the April 30 cash receipt amounting to $1,000 was deposited but it is not included in the bank statement. The outstanding deposit is added to the unreconciled bank balance on the bank reconciliation as shown in Figure 7.3.

**Step 7**

Any errors in the company's records or in the bank statement must be identified and reported on the bank reconciliation.

An examination of the April bank statement shows that the bank deducted a cheque issued by another company for $31 from the BDCC bank account in error. Assume that when notified, the bank indicated it would make a correction in May's bank statement.

The cheque deducted in error must be added to the bank statement balance on the bank reconciliation as shown in Figure 7.3.

**Step 8**

Total both sides of the bank reconciliation. The result must be that the book balance and the bank statement balance are equal or reconciled. These balances represent the adjusted balance.

The bank reconciliation in Figure 7.3 is the result of completing the preceding eight steps.

Big Dog Carworks Corp.
Bank Reconciliation
At April 30, 2023

| | | | | | |
|---|---|---|---|---|---|
| Book balance at Apr. 30 | | $21,929 | Bank statement balance at Apr. 30 | | $24,023 |
| | | | Add: Outstanding deposit | | 1,000 |
| | | | Cheque deducted in error | | 31 |
| | | | | | 25,054 |
| Less: Bank charges | $ 6 | | Less: Outstanding cheques | | |
| NSF Cheque – J. Donne | 180 | 186 | *Cheque No.* | *Amount* | |
| | | | 606 | $ 287 | |
| | | | 607 | 1,364 | |
| | | | 608 | 100 | |
| | | | 609 | 40 | |
| | | | 610 | 1,520 | 3,311 |
| Adjusted book balance at Apr. 30 | | $21,743 | Adjusted bank balance at Apr. 30 | | $21,743 |

These balances must agree.

Reconciling items in this section require journal entries to be made in the general journal to correct the unreconciled Cash balance of $21,929 in the general ledger to the reconciled balance of $21,743.

Reconciling items in this section do not require journal entries because the outstanding deposits and cheques should clear the bank next month, in May. Additionally, the other reconciling items (e.g., the $31 cheque deducted in error) must be reported to the bank so it can make the necessary corrections to Big Dog's account in the next month.

**Figure 7.3: BDCC's April Bank Reconciliation**

**Step 9**

For the adjusted balance calculated in the bank reconciliation to appear in the accounting records, an adjusting entry(s) must be prepared.

The adjusting entry(s) is based on the reconciling item(s) used to calculate the adjusted book balance. The book balance side of BDCC's April 30 bank reconciliation is copied to the left below to clarify the source of the following April 30 adjustments.

| | | |
|---|---|---|
| Book balance at Apr. 30 | | $21,929 |
| Less: Bank charges | $ 6 | |
| NSF Cheque – J. Donne | 180 | 186 |
| Adjusted book balance at Apr. 30 | | $21,743 |

Bank Service Charges Expense . . . . . 6
Cash . . . . . 6
*To record service charges from April 30 bank reconciliation.*

Accounts Receivable – J. Donne . . . . . 180
Cash . . . . . 180
*To record NSF cheque from April 30 bank reconciliation.*

It is common practice to use one compound entry to record the adjustments resulting from a bank reconciliation as shown below for BDCC.

Once the adjustment is posted, the Cash general ledger account is up to date, as illustrated in Figure 7.4.

Bank Service Charges Expense . . . . . 6
Accounts Receivable – J. Donne . . . . . 180
Cash . . . . . 186

*To record reconciling items from April 30 bank reconciliation.*

Cash Acct. No. 101

| Date | | Description | Debit | Credit | DR/CR | Balance |
|---|---|---|---|---|---|---|
| 2023 | | | | | | |
| Mar. | 31 | Balance | | | DR | 20673- |
| Apr. | 30 | April cash receipts | 9482- | | DR | 30155- |
| | 30 | April cash payments | | 8226- | DR | 21929- |
| | 30 | Bank charge expense | | 6- | DR | 21923- |
| | 30 | NSF cheque | | 180- | DR | 21743- |

This adjusted cash balance now agrees with the bank reconciliation.

**Figure 7.4: Updated Cash Account in the General Ledger**

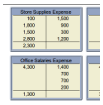
Note that the balance of $21,743 in the general ledger Cash account is the same as the adjusted book balance of $21,743 on the bank reconciliation. Big Dog does not make any adjusting entries for the reconciling items on the bank side of the bank reconciliation since these will eventually clear the bank and appear on a later bank statement. Bank errors will be corrected by the bank.

### Debit and Credit Card Transactions

Debit and credit cards are commonly accepted by companies when customers make purchases. Because the cash is efficiently and safely transferred directly into a company's bank account by the debit or credit card company, such transactions enhance internal control over cash. However, the seller is typically charged a fee for accepting debit and credit cards. For example, assume BDCC makes a $1,000 sale to a customer who uses a credit card that charges BDCC a fee of 2%; the cost of the sale is $750. BDCC would record:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Cash | | 980 | |
| | Credit Card Expense | | 20 | |
| | Sales | | | 1,000 |
| | To record sale and related credit card fee. | | | |
| | Cost of Goods Sold | | 750 | |
| | Merchandise Inventory | | | 750 |
| | To record cost of sales. | | | |

The credit card fee is calculated as the $1,000 sale $\times$ 2% $=$ $20. This means that BDCC collects net cash proceeds of $980 ($1,000 $-$ $20). The use of debit cards also involves fees and these would be journalized in the same manner.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Bank Credit Cards.

## 7.4 Accounts Receivable

LO4 – Explain, calculate, and record estimated uncollectible accounts receivable and subsequent write-offs and recoveries.

Recall from Chapter 5 that the revenue portion of the operating cycle, as copied in Figure 7.5, begins with a sale on credit and is completed with the collection of cash. Unfortunately, not all receivables are collected. This section discusses issues related to accounts receivable and their collection.

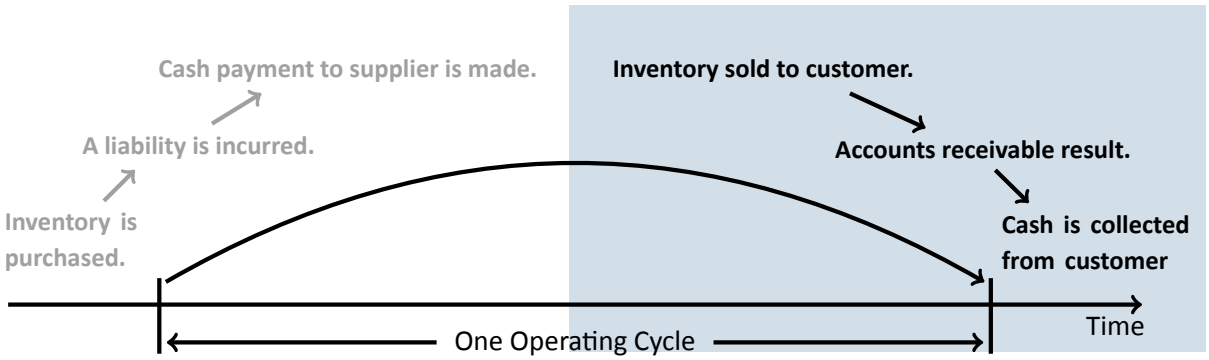
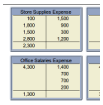



**Figure 7.5: Revenue Portion of Operating Cycle**



An exploration is available on the Lyryx site. Log into your Lyryx course to run Accounts Receivable Transactions.

## Uncollectible Accounts Receivable

Extending credit to customers results in increased sales and therefore profits. However, there is a risk that some accounts receivable will not be collected. A good internal control system is designed to minimize bad debt losses. One such control is to permit sales on account only to credit-worthy customers; this can be difficult to determine in advance. Companies with credit sales realize that some of these amounts may never be collected. **Uncollectible accounts**, commonly known as **bad debts**, are an expense associated with selling on credit.

Bad debt expenses must be matched to the credit sales of the same period. For example, assume BDCC recorded a $1,000 credit sale to XYA Company in April, 2023. Assume further that in 2024 it was determined that the $1,000 receivable from XYA Company would never be collected. The bad debt arising from the credit sale to XYA Company should be matched to the period in which the sale occurred, namely, April, 2023. But how can that be done if it is not known which receivables will become uncollectible? A means of estimating and recording the amount of sales that will not be collected in cash is needed. This is done by establishing a contra current asset account called **Allowance for Doubtful Accounts (AFDA)** in the general ledger to record estimated uncollectible receivables. This account is a contra account to accounts receivable and is disclosed on the balance sheet as shown below using assumed values.

| | | |
|---|---|---|
| Accounts receivable | $25,000 | |
| *Less:* Allowance for doubtful accounts | 1,400 | 23,600 |
| **OR** | | |
| Accounts receivable (net of $1,400 AFDA) | | $ 23,600 |

The Allowance for Doubtful Accounts contra account reduces accounts receivable to the amount

that is expected to be collected — in this case, $23,600.

## Estimating Uncollectible Accounts Receivable

The AFDA account is used to reflect how much of the total Accounts Receivable is estimated to be uncollectible. To record estimated uncollectible accounts, the following adjusting entry is made.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Bad Debts Expense . . . . . | | XXX | |
| | Allowance for Doubtful Accounts . . . . . | | | XXX |
| | To record the adjustment estimating uncollectible accounts receivable. | | | |

The bad debt expense is shown on the income statement. AFDA appears on the balance sheet and is subtracted from accounts receivable resulting in the estimated net realizable accounts receivable.

Two different methods can be used to estimate uncollectible accounts. One method focuses on estimating Bad Debt Expense on the income statement, while the other focuses on estimating the desired balance in AFDA on the balance sheet.

## The Income Statement Method

The objective of the **income statement method** is to estimate bad debt expense based on credit sales. Bad debt expense is calculated by applying an estimated loss percentage to credit sales for the period. The percentage is typically based on actual losses experienced in prior years. For instance, a company may have the following history of uncollected sales on account:

| *Year* | *Credit Sales* | *Amounts Not Collected* |
|---|---|---|
| 2020 | $150,000 | $1,000 |
| 2021 | 200,000 | 1,200 |
| 2022 | 250,000 | 800 |
| | $600,000 | $3,000 |

The average loss over these years is $\frac{\$3{,}000}{\$600{,}000}$, or $\frac{1}{2}$ of 1%. If management anticipates that similar losses can be expected in 2023 and credit sales for 2023 amount to $300,000, bad debts expense would be estimated as $1,500 ($300,000 x 0.005). Under the income statement method, the $1,500 represents estimated bad debt expense and is recorded as:

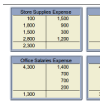
This estimated bad debt expense is calculated without considering any existing balance in the AFDA account.

Bad Debts Expense . . . . . 1,500
Allowance for Doubtful Accounts . . . . . 1,500
*To record the adjustment estimating bad debt expense.*

**AFDA ACCOUNT *BEFORE* POSTING ADJUSTMENT**
Assume the balance remaining in AFDA from the previous period is $250.

**AFDA ACCOUNT *AFTER* POSTING ADJUSTMENT**
The adjustment estimating bad debt expense of $1,500 is posted to AFDA to get an adjusted balance of $1,750.

| Allowance for Doubtful Accounts | | | Allowance for Doubtful Accounts | |
|---|---|---|---|---|
| | Bal. | 250 | Bal. | 250 |
| | | | Adjustment | 1,500 |
| | | | Adjusted Bal. | 1,750 |



An exploration is available on the Lyryx site. Log into your Lyryx course to run Income Statement Method.

## The Balance Sheet Method

Estimated uncollectible accounts can also be calculated by using the **balance sheet method** where a process called **aging of accounts receivable** is used. At the end of the period, the total of estimated uncollectible accounts is calculated by analyzing accounts receivable according to how long each account has been outstanding. An aging analysis approach assumes that the longer a receivable is outstanding, the less chance there is of collecting it. This process is illustrated in the following schedule.

*Aging of Accounts Receivable*
*December 31, 2023*

| | | | *Number of Days Past Due* | | | | |
|---|---|---|---|---|---|---|---|
| *Customer* | *Total* | *Not Yet Due* | *1–30* | *31–60* | *61–90* | *91–120* | *Over 120* |
| Bendix Inc. | $ 1,000 | | | | | | $ 1,000 |
| Devco Marketing Inc. | 6,000 | | $ 1,000 | $3,000 | $2,000 | | |
| Horngren Corp | 4,000 | | 2,000 | 1,000 | | $ 1,000 | |
| Perry Co. Ltd. | 5,000 | | 3,000 | 1,000 | | 1,000 | |
| Others | 9,000 | | 4,000 | | | 5,000 | |
| Totals | $25,000 | $ 0 | $10,000 | $5,000 | $2,000 | $ 7,000 | $ 1,000 |

In this example, accounts receivable total $25,000 at the end of the period. These are classified into six time periods: those receivables that are not yet due; 1–30 days past due; 31–60 days past due; 61–90 days past due; 91–120 days past due; and over 120 days past due.

Based on past experience, assume management estimates a bad debt percentage, or rate of uncollectibility, for each time period as follows:

| *Number of Days Outstanding* | *Not Yet Due* | *1–30* | *31–60* | *61–90* | *91–120* | *Over 120* |
|---|---|---|---|---|---|---|
| *Rate of Uncollectibility* | 0.5% | 1% | 3% | 5% | 10% | 40% |

The calculation of expected uncollectible accounts receivable at December 31, 2023 would be as follows:

Calculation of Uncollectible Amounts
December 31, 2023

| *Age (days)* | *Accounts Receivable* | *Estimated Bad Debt Percentage* | *Estimated Uncollectible Amount* |
|---|---|---|---|
| 1–30 | $10,000 | 1% | $ 100 |
| 31–60 | 5,000 | 3% | 150 |
| 61–90 | 2,000 | 5% | 100 |
| 91–120 | 7,000 | 10% | 700 |
| Over 120 | 1,000 | 40% | 400 |
| Totals | $25,000 | | $1,450 |

The balance remaining in the account is $250 from the previous period.

The total estimated uncollectible receivables is $1,450.

| Allowance for Doubtful Accounts | |
|---|---|
| | Bal. 250 |

| Allowance for Doubtful Accounts | |
|---|---|
| | Bal. 250 |
| | Bal. 1,450 |

A total of $1,450 of accounts receivable is estimated to be uncollectible at December 31, 2023.

Under the balance sheet method, the estimated bad debt expense consists of the *difference* between the opening AFDA balance ($250, as in the prior example) and the estimated uncollectible receivables ($1,450) required at year-end.

$1,200 must be recorded to bring the account to $1,450.

| Allowance for Doubtful Accounts | |
|---|---|
| | Bal. 250 |
| | 1,200 |
| | Bal. 1,450 |

$1,200 is the difference between the $250 unadjusted balance and the required $1,450 closing balance.

The adjustment is recorded by the following journal entry:

Bad Debts Expense . . . . . 1,200
Allowance for Doubtful Accounts 1,200
*To record the adjustment estimating bad debt expense.*

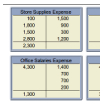
As an alternative to using an aging analysis to estimate uncollectible accounts, a simplified balance

sheet method can be used. The **simplified balance sheet method** calculates the total estimated uncollectible accounts as a percentage of the outstanding accounts receivables balance. For example, assume an unadjusted balance in AFDA of $250 as in the preceding example. Also assume the accounts receivable balance at the end of the period was $25,000 as in the previous illustration. If it was estimated that 6% of these would be uncollectible based on historical data, the adjustment would be:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Bad Debts Expense . . . . . | | 1,250 | |
| | Allowance for Doubtful Accounts . . . . . | | | 1,250 |
| | To record the adjustment estimating bad debt expense. | | | |

The total estimated uncollectible accounts was $1,500 ($25,000 $\times$ 0.06). Given an unadjusted balance in AFDA of $250, the adjustment to AFDA must be a credit of $1,250 ($1,500 – $250).

Regardless of whether the income statement method or balance sheet method is used, the amount estimated as an allowance for doubtful accounts seldom agrees with the amounts that actually prove uncollectible. A credit balance remains in the allowance account if fewer bad debts occur during the year than are estimated. There is a debit balance in the allowance account if more bad debts occur during the year than are estimated. By monitoring the balance in the Allowance for Doubtful Accounts general ledger account at each year-end, though, management can determine whether the estimates of uncollectible amounts are accurate. If not, they can adjust these estimates going forward.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Balance Sheet Method.

## Writing Off Accounts Receivable

When recording the adjusting entry to estimate uncollectible accounts receivable at the end of the period, it is not known which specific receivables will become uncollectible. When an account is determined to be uncollectible, it must be removed from the accounts receivable account. This process is known as a **write-off**. To demonstrate the write-off of an account receivable, assume that on January 15, 2024 the $1,000 credit account for customer Bendix Inc. is identified as uncollectible because of the company's bankruptcy. The receivable is removed by:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | AFDA . . . . . | | 1,000 | |
| | Accounts Receivable – Bendix Inc. . . . . | | | 1,000 |
| | To record write-off of Bendix Inc.'s account receivable. | | | |

The $1,000 write-off reduces both the accounts receivable and AFDA accounts. The write-off does not affect net realizable accounts receivable as demonstrated below.

| | *Before Write-Off* | *Write-Off* | *After Write-Off* |
|---|---|---|---|
| Accounts receivable | $25,000 | Cr 1,000 | $24,000 |
| *Less:* Allowance for doubtful accounts | 1,450 | Dr 1,000 | 450 |
| Net accounts receivable | $23,550 | | $23,550 |

Additionally, a write-off does not affect bad debt expense. This can be a challenge to understand. To help clarify, recall that the adjusting entry to estimate uncollectibles was:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Bad Debts Expense . . . . . | | XXX | |
| | AFDA . . . . . | | | XXX |
| | To record the adjustment estimating bad debt expense. | | | |

This adjustment was recorded because GAAP requires that the bad debt expense be matched to the period in which the sales occurred even though it is not known which receivables will become uncollectible. Later, when an uncollectible receivable is identified, it is written off as:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | AFDA . . . . . | | XXX | |
| | Accounts Receivable . . . . . | | | XXX |
| | To record write-off of account receivable. | | | |

Notice that the AFDA entries cancel each other out so that the net effect is a debit to bad debt expense and a credit to accounts receivable. The use of the AFDA contra account allows us to estimate uncollectible accounts in one period and record the write-off of bad receivables as they become known in a later period.

## Recovery of a Write-Off

When Bendix Inc. went bankrupt, its debt to Big Dog Carworks Corp. was written off in anticipation that there would be no recovery of the amount owed. Assume that later, an announcement was made that 25% of amounts owed by Bendix would be paid. This new information indicates that BDCC will be able to recover a portion of the receivable previously written off. A recovery requires two journal entries. The first entry reinstates the amount *expected* to be collected by BDCC—$250

($1,000 × 25%) in this case and is recorded as:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Accounts Receivable – Bendix Inc. . . . . | | 250 | |
| | AFDA . . . . . | | | 250 |
| | To reverse write-off and reinstate collectible portion of account. | | | |

This entry reverses the collectible part of the receivable previously written off. The effect of the reversal is shown below.

| Accounts Receivable | | | | Allowance for Doubtful Accounts | | | |
|---|---|---|---|---|---|---|---|
| Bal. | $25,000 | Write-off | 1,000 | Write-off | 1,000 | Bal. | 1,450 |
| Recovery | 250 | | | | | Recovery | 250 |

The second entry records the collection of the reinstated amount as:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Cash . . . . . | | 250 | |
| | Accounts Receivable – Bendix Inc. . . . . | | | 250 |
| | To record recovery of collectible portion of account previously written off. | | | |

The various journal entries related to accounts receivable are summarized below.

| | | | |
|---|---|---|---|
| Sale on account. | Accounts Receivable | XXX | |
| | Sales | | XXX |
| | COGS | XXX | |
| | Merchandise Inventory | | XXX |
| Adjusting entry estimating uncollectible accounts. | Bad Debts Expense | XXX | |
| | AFDA | | XXX |
| Write-off of uncollectible account. | AFDA | XXX | |
| | Accounts Receivable | | XXX |
| Recovery of account previously written off. | Accounts Receivable | XXX | |
| | AFDA | | XXX |
| | Cash | XXX | |
| | Accounts Receivable | | XXX |

## 7.5 Short-Term Notes Receivable

LO5 – Explain and record a short-term notes receivable as well as calculate related interest.

Short-term notes receivable are current assets, since they are due within the greater of 12 months or the business's operating cycle. A note receivable is a *promissory note*. A **promissory note** is a signed document where the **debtor**, the person who owes the money, promises to pay the *creditor* the *principal* and *interest* on the *due date*. The **principal** is the amount owed. The **creditor**, or **payee**, is the entity owed the principal and interest. **Interest** is the fee for using the principal and is calculated as: Principal $\times$ Annual Interest Rate $\times$ Time. The **time** or **term** of the note is the period from the *date of the note* to the due date. The **due date**, also known as the **maturity date**, is the date on which the principal and interest must be paid. The **date of the note** is the date the note begins accruing interest.

Short-term notes receivable can arise at the time of sale or when a customer's account receivable becomes overdue. To demonstrate the conversion of a customer's account to a short-term receivable, assume that BDCC's customer Bendix Inc. is unable to pay its $5,000 account within the normal 30-day period. The receivable is converted to a 5%, 60-day note dated December 5, 2023 with the following entry:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Dec 5 | Notes Receivable - Bendix . . . . . | | 5,000 | |
| | Accounts Receivable - Bendix . . . . . | | | 5,000 |
| | To record the conversion of a customer's account to a 5%, 60-day note dated December 5, 2023. | | | |

The note is due on February 3, 2023 calculated as:

| | |
|---|---|
| Days in December | 31 |
| Less: December 5 date of the note | 5 |
| Subtotal number of days | 26 |
| Add: Days in January | 31 |
| Subtotal number of days | 57 |
| **Add: Days in February to total 60 days** | **3** |
| Total term of the note in days | 60 |

Assuming a December 31, year-end for BDCC, the adjusting entry to accrue interest on December 31 would be:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Dec 31 | Interest Receivable . . . . . | | 17.81 | |
| | Interest Revenue . . . . . | | | 17.81 |
| | To record the accrual of interest from December 5 to December 31. | | | |

The interest of $17.81 was calculated as: $5,000 × 5% × 26/365[2] = $17.80822 rounded to $17.81. ***All interest calculations in this textbook are rounded to two decimal places.***

At maturity, February 3, 2024, BDCC collects the note plus interest and records:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Feb 3 | Cash . . . . . | | 5,041.10 | |
| | Note Receivable - Bendix . . . . . | | | 5,000.00 |
| | Interest Receivable . . . . . | | | 17.81 |
| | Interest Revenue . . . . . | | | 23.29 |
| | To record the collection of the principal and interest. | | | |

The total interest realized on the note was $41.10 ($5,000 × 5% × 60/365 = $41.0959 rounded to $41.10). Part of the $41.10 total interest revenue was realized in 2023 ($17.81) and the rest in

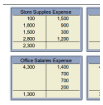
[2]When calculating interest based on days, use 365 days per year.

2024 ($41.10 - $17.81 = $23.29). Therefore, care must be taken to correctly allocate the interest between periods. The total cash received by BDCC on February 3 was the sum of the principal and interest: $5,000.00 + $41.10 = $5,041.10.

When the term of a note is expressed in months, the calculations are less complex. For example, assume that BDCC sold customer Woodlow a $4,000 service on August 1, 2023. On that date, the customer signed a 4%, 3-month note. The term of the note is based on months and not days therefore the maturity date is October 31, 2023. BDCC would record the collection on October 31 as:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Oct 31 | Cash | | 4,040 | |
| | Note Receivable - Woodlow | | | 4,000 |
| | Interest Revenue | | | 40 |
| | To record the collection of the principal and interest. | | | |

The total interest realized on the note was $40 ($4,000 × 4% × 3/12[3] = $40.00)



An exploration is available on the Lyryx site. Log into your Lyryx course to run Notes Receivable.

## 7.6 Appendix A: Ratio Analysis—Acid Test

LO6 – Explain and calculate the acid-test ratio.

The **acid-test ratio**, also known as the **quick ratio**, is a liquidity ratio that is a strict measure of a business's availability of cash to pay current liabilities as they come due. It is considered a strict measure because it includes only *quick current assets*. **Quick current assets** are those current assets that are one step away from becoming cash. For example, accounts receivable are a quick current asset because collection of receivables results in cash. However, inventory is not a quick current asset because it is two steps from cash — it has to be sold which creates an account receivable and the receivable then has to be collected. Prepaids are not a quick current asset because the intent in holding prepaids is not to convert them into cash but, instead, to use them (e.g., prepaid insurance becomes insurance expense as it is used). Quick current assets include only cash, short-term investments, and receivables.

[3] When calculating interest based on months, use 12 months per year.

The acid-test ratio is calculated as:

**Quick current assets ÷ Current liabilities**

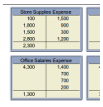
The acid-test ratios for three companies operating in a similar industry are shown below:

| | Acid-Test Ratios | | |
|---|---|---|---|
| **Year** | **Company A** | **Company B** | **Company C** |
| **2022** | 0.56 | 1.3 | 8.6 |
| **2023** | 0.72 | 1.2 | 8.7 |

In 2022, Company A's acid-test ratio shows that it has only $0.56 to cover each $1.00 of current liabilities as they come due. Company A therefore has a liquidity issue. Although Company A's acid-test ratio is still unfavourable in 2023, the change is favourable because the liquidity improved. So a company can have an unfavourable acid-test ratio but show a favourable change.

Company B's 2022 acid-test shows that it has favourable liquidity: $1.30 to cover each $1.00 of current liabilities as they come due. However, the change from 2022 to 2023 shows a decrease in the acid-test ratio which is unfavourable although Company B's acid-test still shows favourable liquidity. So a company can have a favourable acid-test ratio but an unfavourable change.

Company C's 2022 acid-test ratio indicates that it has favourable liquidity: $8.60 to cover each $1.00 of current liabilities as they come due. However, this is actually unfavourable because a company can have an acid-test ratio that is too high. If the acid-test ratio is too high, it is a reflection that the company has idle assets. Idle assets do not typically generate the most optimum levels of revenue. Remember that the purpose of holding assets is to generate revenue. In 2023, Company C's acid-test ratio increased a bit and it is still excessive which is unfavourable. So the change was favourable but because the ratio is too high, it reflects an unfavourable liquidity position, though for different reasons than Company A.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Using the Information - Acid-Test Ratio.

## 7.7 Appendix B: Ratio Analysis—Accounts Receivable Turnover

LO7 – Explain and calculate the accounts receivable turnover.

The accounts receivable turnover not only measures the liquidity of receivables but also the efficiency of collection, referred to as turnover (i.e., accounts receivable *turnover* into cash). A low turnover indicates high levels of accounts receivable which has

an unfavourable impact on liquidity since cash is tied up in receivables. A low turnover means management might need to review credit granting policies and/or strengthen collection efforts.

The accounts receivable turnover is calculated as:

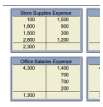
Net credit sales (or revenues) ÷ **Average net accounts receivable**[4]

Average accounts receivable is calculated by taking the beginning of the period balance plus the end of the period balance and dividing the sum by two.

The accounts receivable turnover ratios for two companies operating in a similar industry are shown below:

| | Accounts Receivable Turnover | |
|---|---|---|
| **Year** | **Company A** | **Company B** |
| **2023** | 5.8 | 6.9 |

Company B is more efficient at collecting receivables than is Company A. The higher the ratio, the more favourable.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Accounts Receivable Turnover Ratio.

## Summary of Chapter 7 Learning Objectives

### LO1 – Define internal control and explain how it is applied to cash.

The purpose of internal controls is to safeguard the assets of a business. Since cash is a particularly vulnerable asset, policies and procedures specific to cash need to be implemented, such as the use of cheques and electronic funds transfer for payments, daily cash deposits into a financial institution, and the preparation of bank reconciliations.

[4]Short-term notes receivable from customers would be included in this amount.

### LO2 – Explain and journalize petty cash transactions.

A petty cash fund is used to pay small, irregular amounts for which issuing a cheque would be inefficient. A petty cash custodian administers the fund by obtaining a cheque from the cash payments clerk. The cheque is cashed and the coin and currency placed in a locked box. The petty cash custodian collects receipts and reimburses individuals for the related amounts. When the petty cash fund is replenished, the receipts are compiled and submitted for entry in the accounting records so that a replacement cheque can be issued and cashed.

### LO3 – Explain the purpose of and prepare a bank reconciliation, and record related adjustments.

A bank reconciliation is a form of internal control that reconciles the bank statement balance to the general ledger cash account, also known as the book balance. Reconciling items that affect the bank statement balance are outstanding deposits, outstanding cheques, and bank errors. Reconciling items that affect the book balance are collections made by the bank on behalf of the company, NSF cheques, bank service charges, and errors. Once the book and bank statement balances are reconciled, an adjusting entry is prepared based on the reconciling items affecting the book balance.

### LO4 – Explain, calculate, and record estimated uncollectible accounts receivable and subsequent write-offs and recoveries.

Not all accounts receivable are collected, resulting in uncollectible accounts. Because it is not known which receivables will become uncollectible, the allowance approach is used to match the cost of estimated uncollectible accounts to the period in which the related revenue was generated. The adjusting entry to record estimated uncollectibles is a debit to Bad Debt Expense and a credit to Allowance for Doubtful Accounts (AFDA). The income statement method and the balance sheet method are two ways to estimate and apply the allowance approach. The income statement method calculates bad debt expense based on a percentage of credit sales while the balance sheet method calculates total estimated uncollectible accounts (aka the balance in AFDA) using an aging analysis. When receivables are identified as being uncollectible, they are written off. If write-offs subsequently become collectible, a recovery is recorded using two entries: by reversing the write-off (or the portion that is recoverable) and then journalizing the collection.

### LO5 – Explain and record a short-term notes receivable as well as calculate related interest.

A short-term notes receivable is a promissory note that bears an interest rate calculated over the term of the note. Short-term notes receivable are current assets that mature within 12 months

from the date of issue or within a business's operating cycle, whichever is longer. Notes can be issued to a customer at the time of sale, or a note receivable can replace an overdue receivable.

### LO6 – Explain and calculate the acid-test ratio.

The acid-test ratio is a strict measure of liquidity. It is calculated as quick current assets divided by current liabilities. Quick assets include cash, short-term investments, and accounts receivable.

### LO7 – Explain and calculate the accounts receivable turnover.

The accounts receivable turnover is a measure of liquidity and demonstrates how efficiently receivables are being collected. It is calculated as net sales divided by average accounts receivable. Average accounts receivable are the sum of the beginning accounts receivable, including short-term notes receivable from customers, plus ending receivables, divided by two.

## Discussion Questions

1. What is internal control?
2. How does the preparation of a bank reconciliation strengthen the internal control of cash?
3. What are some reconciling items that appear in a bank reconciliation?
4. What are the steps in preparing a bank reconciliation?
5. What is an NSF cheque?
6. What is a petty cash system?
7. What is the difference between establishing and replenishing the petty cash fund?
8. How does use of allowance for doubtful accounts match expenses with revenue?
9. How does the income statement method calculate the estimated amount of uncollectible accounts?
10. What is an ageing schedule for bad debts, and how is it used in calculating the estimated amount of uncollectible accounts?
11. How are credit balances in accounts receivable reported on the financial statements?

## Exercises

---

**EXERCISE 7–1 (LO2)** Watch video

The following transactions were made by Landers Corp. in March 2023.

| | | | |
|---|---|---|---|
| Mar. 1 | Established a petty cash fund of $200 | | |
| 12 | Reimbursed the fund for the following: | | |
| | Postage | $10 | |
| | Office supplies | 50 | |
| | Maintenance | 35 | |
| | Meals (selling expenses) | 25 | |
| | | $120 | |
| 18 | Increased the fund by an additional $200 | | |
| 25 | Reimbursed the fund for the following: | | |
| | Office supplies | $75 | |
| | Delivery charges | 30 | |
| | | $105 | |
| 28 | Reduced the amount of the fund to $350. | | |

**Required**: Prepare journal entries to record the petty cash transactions.

---

**EXERCISE 7–2 (LO3)**

The following information pertains to Ferguson Corp. at December 31, 2023, its year-end:

| | | |
|---|---|---|
| Cash per company records | | $5,005 |
| Cash per bank statement | | 7,000 |
| Bank service charges not yet recorded in company records | | 30 |
| Note collected by bank not yet recorded in company records: | | |
| Amount of note receivable | $1,300 | |
| Amount of interest | 25 | 1,325 |
| Fluet inc. cheque deducted in error by bank | | 200 |
| December cheques not yet paid by bank in December: | | |
| #631 | $354 | |
| #642 | 746 | |
| #660 | 200 | |
| #661 | 300 | 1,600 |
| December deposit recorded by the bank January 3, 2024 | | 700 |

**Required**: Prepare a bank reconciliation and all necessary adjusting entries at December 31, 2023.

---

**EXERCISE 7–3 (LO3)** Watch video

The Cash general ledger account balance of Gladstone Ltd. was $2,531 at March 31, 2023. On this same date, the bank statement had a balance of $1,500. The following discrepancies were noted:

**a.** A deposit of $1,000 made on March 30, 2023 was not yet recorded by the bank on the March statement.

**b.** A customer's cheque amounting to $700 and deposited on March 15 was returned NSF with the bank statement.

**c.** Cheque #4302 for office supplies expense, correctly made out for $125 and cleared the bank for this amount, was recorded in the company records incorrectly as $152.

**d.** $20 for March service charges were recorded on the bank statement but not in the company records.

**e.** A cancelled cheque for $250 belonging to Global Corp. but charged by the bank to Gladstone Ltd. was included with the cancelled cheques returned by the bank.

**f.** There were $622 of outstanding cheques at March 31.

**g.** The bank collected a net amount of $290: $250 regarding a note receivable, interest revenue of $50, and a $10 service charge that also is not included in the company records.

**Required**: Prepare a bank reconciliation and record all necessary adjusting entries at March 31, 2023.

---

**EXERCISE 7–4 (LO4)** Watch video

Sather Ltd. had the following unadjusted account balances at December 31, 2023 (assume normal account balances):

| | |
|---|---|
| Accounts Receivable | $147,000 |
| Allowance for Doubtful Accounts | 3,000 |
| Sales | 750,000 |

**Required**:

**a.** Assume that Sather Ltd. estimated its uncollectible accounts at December 31, 2023 to be two per cent of sales.

i. Prepare the appropriate adjusting entry to record the estimated uncollectible accounts at December 31, 2023.

ii. Calculate the balance in the Allowance for Doubtful Accounts account after posting the adjusting entry.

**b.** Assume that Sather Ltd. estimated its uncollectible accounts at December 31, 2023 to be ten per cent of the unadjusted balance in accounts receivable.

i. Prepare the appropriate adjusting entry to record the estimated uncollectible accounts at December 31, 2023.

ii. Calculate the balance in the Allowance for Doubtful Accounts account after posting the adjusting entry.

**c.** Why is there a difference in the calculated estimates of doubtful accounts in parts (a) and (b)?

**d.** Which calculation provides better matching: that made in part (a) or in part (b)? Why?

---

**EXERCISE 7–5 (LO4)**

The following information is taken from the records of Salzl Corp. at its December 31 year-end:

| | *2022* | *2023* |
|---|---|---|
| Accounts written off | | |
| During 2022 | $2,400 | |
| During 2023 | | $1,000 |
| Recovery of accounts written off | | |
| Recovered in 2023 | | 300 |
| Allowance for doubtful accounts (adjusted balance) | | |
| At December 31, 2021 | 8,000 | |
| At December 31, 2022 | 9,000 | |

Salzl had always estimated its uncollectible accounts at two per cent of sales. However, because of large discrepancies between the estimated and actual amounts, Hilroy decided to estimate its December 31, 2023 uncollectible accounts by preparing an ageing of its accounts receivable. An amount of $10,000 was considered uncollectible at December 31, 2023.

**Required**:

**a.** Calculate the amount of bad debt expense for 2022.

**b.** What adjusting entry was recorded at December 31, 2022 to account for bad debts?

**c.** Calculate the amount of bad debt expense for 2023.

**d.** What adjusting entry was recorded at December 31, 2023 to account for bad debts?

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**EXERCISE 7–6 (LO5)** Watch video

Following are notes receivable transactions of Vilco Inc. whose year-end is March 31:

| | |
|---|---|
| Mar. 1 | Accepted a $40,000, 90-day, 3% note receivable dated today in granting a time extension to West Corp. on its past-due accounts receivable. |
| Mar. 31 | Made an adjusting entry to record the accrued interest on West Corp.'s note receivable. |
| May 30 | Received West Corp.'s payment for the principal and interest on the note receivable dated March 1. |
| Jun. 15 | Accepted a $50,000, 45-day, 3% note receivable dated today in granting a time extension to Jill Monte on her past-due accounts receivable. |
| ??? | Received Jill Monte's payment for the principal and interest on her note dated June 15. |

**Required**:

**a.** Prepare journal entries to record Vilco Inc.'s transactions (round all calculations to two decimal places).

**b.** Assume instead that on May 30 West Corp. dishonoured (did not pay) its note when presented for payment. How would Vilco Inc. record this transaction on May 30?

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**EXERCISE 7–7 (LO6,7)**

The following comparative information is taken from the records of Salzl Corp. at its December 31 year-ends from 2021 to 2023:

| | *2023* | *2022* | *2021* |
|---|---|---|---|
| Cash | $42,000 | $30,000 | $21,000 |
| Accounts receivable | 25,000 | 20,000 | 14,000 |
| Merchandise inventory | 36,000 | 25,000 | 17,500 |
| Prepaid insurance | 6,000 | 4,000 | 2,800 |
| Plant and equipment | 160,000 | 160,000 | 112,000 |
| Accumulated depreciation – plant and equipment | 68,000 | 54,000 | 37,800 |
| Accounts payable | 14,000 | 12,000 | 8,400 |
| Salaries payable | 9,000 | 8,000 | 5,600 |
| Income tax payable | 11,000 | 9,000 | 6,300 |
| Bank loan, due in 3 months | 17,000 | 0 | 0 |
| Bank loan, due in 24 months | 48,000 | 0 | 0 |
| Share capital | 50,000 | 50,000 | 35,000 |
| Retained earnings | 15,000 | 12,000 | 8,400 |
| Dividends | 15,000 | 15,000 | 10,500 |
| Sales | 375,000 | 367,000 | 256,900 |
| Cost of goods sold | 190,000 | 152,000 | 106,400 |
| Operating expenses | 120,000 | 96,000 | 67,200 |
| Income tax expense | 13,000 | 10,000 | 7,000 |

**Required**:

**a.** Calculate the acid-test and accounts receivable turnover ratios for each of 2022 and 2023 (round final calculations to two decimal places).

**b.** Was the change in each ratio from 2022 to 2023 favourable or unfavourable? Explain.

## Problems

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**PROBLEM 7–1 (LO3)**

The reconciliation of the cash balance per bank statement with the balance in the Cash account in the general ledger usually results in one of five types of adjustments. These are

a. Additions to the reported general ledger cash balance.

b. Deductions from the reported general ledger cash balance.

c. Additions to the reported cash balance per the bank statement.

d. Deductions from the reported cash balance per the bank statement.

e. Information that has no effect on the current reconciliation.

**Required**: Using the above letters a to e from the list, indicate the appropriate adjustment for each of the following items that apply to Goertzen Ltd. for December, 2023:

_____ The company has received a $3,000 loan from the bank that was deposited into its bank account but was not recorded in the company records.

_____ A $250 cheque was not returned with the bank statement though it was paid by the bank.

_____ Cheques amounting to $4,290 shown as outstanding on the November reconciliation still have not been returned by the bank.

_____ A collection of a note receivable for $1,000 made by the bank has not been previously reported to Goertzen. This includes interest earned of $50.

_____ The bank has erroneously charged Goertzen with a $1,100 cheque, which should have been charged to Gagetown Ltd.

_____ A $350 cheque made out by Fynn Company and deposited by Goertzen has been returned by the bank marked NSF; this is the first knowledge Goertzen has of this action.

_____ An $840 cheque from customer Abe Dobbs was incorrectly recorded as $730 in the company records.

_____ A $600 bank deposit of December 31 does not appear on the bank statement.

_____ Bank service charges amounting to $75 were deducted from the bank statement but not yet from the company records.

**PROBLEM 7–2 (LO2) Petty Cash**

As of August 1, 2023, Bolchuk Buildings Ltd. decided that establishing a petty cash fund would be more efficient way to handle small day-to-day reimbursements. Below is a list of transactions during August:

August 2 Prepared and cashed a $500 cheque to establish the petty cash fund for the first time.
3 Purchased some office supplies for $35.00 for immediate use.
4 Paid $20.00 for delivery charges for some merchandise inventory purchased from a supplier, fob shipping point.
6 Reimbursed an employee $139.60 for travel expenses to attend an out of town meeting.
8 Paid a delivery charge of $32.00 regarding a sale to a customer.
10 Purchased a birthday cake for all the employees having a birthday in August as part of their employee recognition program. Cost was $80.00.
14 Paid $145.00 for postage to cover postage needs for the next 6 months.
15 Checked the petty cash and realized that it needed to be replenished so a cheque was issued to replenish the fund and increase it to $800.00. Petty cash currency was counted and totalled $50.00.
17 Reimbursed an employee $75.80 for company-related travel expenses.
20 Purchased shop supplies for $300.00 to replenish shop inventory.
24 Paid $56.00 to a courier company to deliver documents to a customer.
28 Paid $345.00 to repair a broken window.
31 Cheque issued to replenish petty cash. Petty cash was counted and totalled $20.00.

**Required**: Prepare journal entries with dates as needed to record the items above.

**PROBLEM 7–3 (LO3) Bank Reconciliation**

It was time for Trevrini Co. to complete its bank reconciliation for November 30, 2023. Below is information that may relate to the task:

1. The cash balance as at November 30, 2023 was a debit balance of $23,500. The ending balance shown on the bank statement was $30,000.
2. Cheques that were outstanding at November 30 were:

| | |
|---|---|
| Chq 236 | $230 |
| Chq 240 | 15 |

3. It was noted that Cheque 230 was recorded as $50 in the accounting records but was posted by the bank as $55 in error.
4. The bank statement showed a deposit of $180 for a $200 non-interest bearing note that the bank had collected on behalf of the company, net of the $20 bank service charge for collection of the note. This was not yet recorded in the company's books.
5. The bank statement showed a deduction of $1,500 for a cheque from a customer for payment on account returned NSF. Included in this charge was a $25 NSF charge.
6. The bank statement also showed a deduction of bank service charge fees of $18.
7. A deposit recorded by the company for $4,500 did not yet appear in the bank statement.

**Required**:

1. Prepare a bank reconciliation for the company as at November 30, 2023.
2. Prepare any necessary journal entries as a result of the bank reconciliation.

---

**PROBLEM 7–4 (LO4)**

Tarpon Inc. made $1,000,000 in sales during 2023. Thirty per cent of these were cash sales. During 2023, $25,000 of accounts receivable were written off as being uncollectible. In addition, $15,000 of the accounts that were written off in 2022 were unexpectedly collected in 2023. The December 31, 2022 adjusted balance in AFDA was a credit of $15,000. At its December 31, 2023 year-end, Tarpon had the following accounts receivable:

| *Age (days)* | *Accounts Receivable* |
|---|---|
| 1-30 | $100,000 |
| 31-60 | 50,000 |
| 61-90 | 25,000 |
| 91-120 | 60,000 |
| Over 120 | 15,000 |
| Total | $250,000 |

**Required**:

1. Prepare journal entries to record the following 2023 transactions:

(a) The write-off of $25,000.

(b) The recovery of $15,000.

2. Calculate the unadjusted balance in AFDA at December 31, 2023.

3. Prepare the adjusting entry required at December 31, 2023 for each of the following scenarios:

   (a) Bad debts at December 31, 2023 is based on three per cent of credit sales.

   (b) Estimated uncollectible accounts at December 31, 2023 is estimated at five per cent of accounts receivable.

   (c) Estimated uncollectible accounts at December 31, 2023 is calculated using the following aging analysis:

| *Age (days)* | *Estimated Loss Percentage* |
|---|---|
| 01-30 | 2% |
| 31-60 | 4% |
| 61-90 | 5% |
| 91-120 | 10% |
| Over 120 | 50% |

4. Calculate the December 31, 2023 adjusted balance in AFDA based on the adjustments prepared in 3(a), 3(b), and 3(c) above.

---

**PROBLEM 7–5 (LO4) Recording Accounts Receivable Related Entries**

Ripter Co. Ltd. began operations on January 1, 2022. It had the following transactions during 2022, 2023, and 2024.

| | |
|---|---|
| Dec 31, 2022 | Estimated uncollectible accounts as $5,000 (calculated as 2% of sales) |
| Apr 15, 2023 | Wrote off the balance of Coulter, $700 |
| Aug 8, 2023 | Wrote off $3,000 of miscellaneous customer accounts as uncollectible |
| Dec 31, 2023 | Estimated uncollectible accounts as $4,000 (1.5% of sales) |
| Mar 6, 2024 | Recovered $200 from Coulter, whose account was written off in 2023; no further recoveries are expected |
| Sep 4, 2024 | Wrote off as uncollectible $4,000 of miscellaneous customer accounts |
| Dec 31, 2024 | Estimated uncollectible accounts as $4,500 (1.5% of sales). |

**Required**:

1. Prepare journal entries to record the above transactions.
2. Assume that management is considering a switch to the balance sheet method of calculating the allowance for doubtful accounts. Under this method, the allowance at the end of 2024 is estimated to be $2,000. Comment on the discrepancy between the two methods of estimating allowance for doubtful accounts.

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**PROBLEM 7–6 (LO4) Recording Accounts Receivable Adjusting Entries**

The following balances are taken from the unadjusted trial balance of Cormrand Inc. at its year-end, December 31, 2023:

| | *Account Balances* | |
|---|---|---|
| | *Debit* | *Credit* |
| Accounts Receivable | $100,000 | |
| Allowance for Doubtful Accounts | 1,800 | |
| Sales (all on credit) | 750,000 | |
| Sales Returns and Allowances | | $22,000 |

The balance of a customer's account in the amount of $1,000 is over 90 days past due and management has decided to write this account off.

**Required**:

1. Record the write-off of the uncollectible account.
2. Record the adjusting entry if the bad debts are estimated to be 2% of sales.
3. Record the adjusting entry if instead, the bad debts are estimated to be 4% of the adjusted accounts receivable balance as at December 31, 2023.
4. Show how Accounts Receivable and the Allowance for Doubtful Accounts would appear on the December 31, 2023, balance sheet for parts (1) and (2).

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**PROBLEM 7–7 (LO5) Recording Short-term Notes Receivables Transactions**

Below are transactions for Regal Co.:

**2022**

Dec 12 Accepted a $20,500, 30-day, 5% note dated this date from a customer in exchange for their past-due accounts receivable amount owing.
Dec 31 Made an adjusting entry to record the accrued interest on the Dec 12 note.
Dec 31 Closed the Interest Revenue account as part of the closing process at year-end.

**2023**

Jan 12 Received payment for the principal and interest on the note dated December 12.
Jan 14 Accepted a $12,000, 6%, 60-day note dated this date for a sale to a customer with a higher credit risk. Cost of goods was $7,500.
Jan 31 Made adjusting entries to record the accrued interest for January, 2023 for all outstanding notes receivable.
Feb 10 Accepted a $6,600, 90-day, 9% note receivable dated this day in exchange for his past-due account.
Feb 28 Made adjusting entries to record the accrued interest for January, 2023 regarding any outstanding notes receivable.
? Received payment for the principal and interest on the note dated January 14.

**Required**:

1. Prepare the journal entries for the transactions above. Determine the maturity date of the January 14 note required for the journal entry. Round interest amounts to the nearest whole dollar for simplicity.
2. Determine the maturity date of the February 10 note.

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**PROBLEM 7–8 (LO5) Notes Receivables**

| | Note Date | Face Value | Note Term | Interest Rate | Maturity Date | Accrued Interest |
|---|---|---|---|---|---|---|
| | | | | | | Dec 31, 2022 |
| a) | Jan 1, 2023 | $260,000 | 180 days | 4.0% | | |
| b) | Jan 15, 2023 | 180,000 | 3 months | 5.0% | | |
| c) | Jun 21, 2023 | 40,000 | 45 days | 5.5% | | |
| d) | Dec 1, 2023 | 60,000 | 4 months | 6.5% | | |

**Required**:

1. Determine the maturity date for each note.

2. For each note, calculate the total amount of accrued interest from the note date to December 31, 2023 (the company year-end). Round interest to the nearest whole dollar.
3. What is the amount that would be collected for each note, assuming that both interest and principal are collected at maturity?

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**PROBLEM 7–9 (LO6) Ratio Calculations**

The following information was taken from the December 31, 2022, financial statements of Stonehedge Cutters Ltd.:

| | 2023 | 2022 |
|---|---|---|
| Sales | $250,000 | $162,000 |
| Sales discounts | 52,000 | 2,300 |
| Sales allowances | 5,000 | 500 |
| Accounts receivable | 53,000 | 22,000 |

**Required**:

1. Calculate the accounts receivable turnover for 2023. Round answer to two decimal places.
2. If the ratio was 5.25 from 2022, has the company become more efficient or not?

# Chapter 8

# Long-lived Assets

*Long-lived* assets or *property, plant, and equipment (PPE)* assets are used in the normal operating activities of the business and are expected to provide benefits for a period in excess of one year. Long-lived assets covered in this chapter consist of three types: property, plant, and equipment (PPE), intangible assets, and goodwill. Also discussed are *depreciation* and *amortization*, techniques to allocate the cost of most long-lived assets over their estimated useful lives.

## Chapter 8 Learning Objectives

LO1 – Describe how the cost of property, plant, and equipment (PPE) is determined, and calculate PPE.

LO2 – Explain, calculate, and record depreciation using the units-of-production, straight-line, and double-declining balance methods.

LO3 – Explain, calculate, and record depreciation for partial years.

LO4 – Explain, calculate, and record revised depreciation for subsequent capital expenditures.

LO5 – Explain, calculate, and record the impairment of long-lived assets.

LO6 – Account for the derecognition of PPE assets.

LO7 – Explain and record the acquisition and amortization of intangible assets.

LO8 – Explain goodwill and identify where on the balance sheet it is reported.

LO9 – Describe the disclosure requirements for long-lived assets in the notes to the financial statements.

## Concept Self-Check

Use the following as a self-check while working through Chapter 8.

1. What is the distinction between capital expenditures and revenue expenditures?

2. How do generally accepted accounting principles prescribe what amount should be capitalized?
3. How is partial period depreciation recorded?
4. What is the formula for calculating revised depreciation?
5. What is the difference between a tangible and intangible long-lived asset?
6. What different methods can be used to calculate depreciation for property, plant, and equipment?
7. How are disposals of property, plant, and equipment recorded in the accounting records?
8. How is the impairment of a long-lived asset accounted for?
9. How are intangible assets amortized?
10. What is goodwill and what is its accounting treatment?

**NOTE:** The purpose of these questions is to prepare you for the concepts introduced in the chapter. Your goal should be to answer each of these questions as you read through the chapter. If, when you complete the chapter, you are unable to answer one or more the Concept Self-Check questions, go back through the content to find the answer(s). Solutions are not provided to these questions.

## 8.1 Establishing the Cost of Property, Plant, and Equipment (PPE)

LO1 – Describe how the cost of property, plant, and equipment (PPE) is determined, and calculate PPE.

Property, plant, and equipment (PPE) are *tangible* long-lived assets that are acquired for the purpose of generating revenue either directly or indirectly. They are held for use in the production or supply of goods and services, have been acquired for use on a continuing basis, and are not intended for sale in the ordinary course of business. Because PPE assets are long-lived or have a life greater than one year, they are non-current in nature, also known as long-term assets. Examples of PPE assets include land, office and manufacturing buildings, production machinery, trucks, ships or aircraft used to deliver goods or transport passengers, salespersons' automobiles owned by a company, or a farmer's production machinery like tractors and field equipment. PPE assets are **tangible assets** because they can be physically touched. There are other types of non-current assets that are *intangible* – existing only as legal concepts – like copyrights and patents. These will be discussed later in this chapter.

## Capital Expenditures

Any cash disbursement is referred to as an **expenditure**. A **capital expenditure** results in the acquisition of a non-current asset, including any additional costs involved in preparing the asset for its intended use. Examples of various costs that may be incurred to prepare PPE for use are listed below.

| | *Capital Expenditures* | | |
|---|---|---|---|
| | *Land* | *Building* | *Equipment* |
| Costs to Acquire PPE | Purchase price<br>Commission to real estate agent<br>Legal fees | Purchase price<br>Commission to real estate agent<br>Legal fees | Invoice cost<br>Transportation<br>Insurance (during transportation) |
| Costs to Prepare PPE for Use | Costs of draining, clearing, and landscaping; demolition<br>Assessments for streets and sewage system | Repair and remodelling costs before use<br>Payments to tenants for premature termination of lease | Assembly<br>Installation (including wages paid to company employees)<br>Special floor foundations or supports<br>Wiring<br>Inspection<br>Test run costs |

To demonstrate, assume that equipment is purchased for $20,000. Additional costs include transportation costs $500, installation costs $1,000, construction costs for a cement foundation $2,500, and test run(s) costs to debug the equipment $2,000. The total capitalized cost of the asset to put it into use is $26,000.

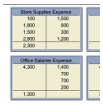
Determining whether an outlay is a capital expenditure or a *revenue expenditure* is a matter of judgment. A **revenue expenditure** does not have a future benefit beyond one year. The concept of materiality enters into the distinction between capital and revenue expenditures. As a matter of expediency, an expenditure of $20 that has all the characteristics of a capital expenditure would probably be expensed rather than capitalized, because the time and effort required by accounting staff to capitalize and then depreciate the item over its estimated useful life is so much greater than the benefits derived from doing so. Capitalization policies are established by many companies to resolve the problem of distinguishing between capital and revenue expenditures. For example, one company's capitalization policy may state that all capital expenditures equal to or greater than $1,000 will capitalized, while all capital expenditures under $1,000 will be expensed when incurred. Another company may have a capitalization policy limit of $500. Additionally, a company may have a different capitalization policy for different types of plant and equipment assets – hand tools may have a capitalization policy limit of $200 while the limit might be $1,000 for furniture.

Not all asset-related expenditures incurred after the purchase of an asset are capitalized. An expenditure made to maintain PPE in satisfactory working order is a revenue expenditure and recorded as a debit to an expense account. Examples of these expenditures include: (a) the cost of replacing small parts of an asset that normally wear out (in the case of a truck, for example: new tires, new muffler, new battery); (b) continuing expenditures for maintaining the asset in good working order (for example, oil changes, antifreeze, transmission fluid changes); and (c) costs of renewing structural parts of an asset (for example, repairs of collision damage, repair or replacement of rusted parts).

Although some expenditures for repair and maintenance may benefit more than one accounting period, they may not be material in amount or they may have uncertain future benefits. They are therefore treated as expenses. These three criteria must all be met for an expenditure to be considered capital in nature.

1. Will it benefit more than one accounting period?
2. Will it enhance the service potential of the asset, or make it more valuable or more adaptable?
3. Is the dollar amount material?

Regardless of when an expenditure is incurred, if it meets the three criteria above it will always be a capital expenditure and debited to the appropriate asset account. If the expenditure does not meet all three criteria, then it is a revenue expenditure and is expensed.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Revenue and Capital Expenditures.

**Land**

The purchase of land is a capital expenditure when land is used in the operation of a business. In addition to the costs listed in the schedule above, the cost of land should be increased by the cost of removing any unwanted structures on it. This cost is reduced by the proceeds, if any, obtained from the sale of the scrap. For example, assume that the purchase price of land is $100,000 before an additional $15,000 cost to raze an old building: $1,000 is expected to be received for salvaged materials. The cost of the land is $114,000 ($100,000 + $15,000 - $1,000).

Frequently, land and useful buildings are purchased for a *lump sum*. That is, one price is negotiated for their entire purchase. A lump sum purchase price must be apportioned between the PPE assets acquired on the basis of their respective market values, perhaps established by a municipal assessment or a professional land appraiser. Assume that a lump sum of $150,000 cash is paid

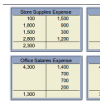
for land and a building, and that the land is appraised at 25% of the total purchase price. The Land account would be debited for $37,500 ($150,000 x 25%) and the Building account would be debited for the remaining 75% or $112,500 ($150,000 x 75% = $112,500 or $150,000 - $37,500 = $112,500) as shown in the following journal entry.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Land | | 37,500 | |
| | Building | | 112,500 | |
| | Cash | | | 150,000 |
| | To record the purchase of land and building for a lump sum of $150,000; $150,000 x 25% = $37,500; $150,000 x 75% = $112,500. | | | |

An exploration is available on the Lyryx site. Log into your Lyryx course to run Lump Sum Purchases.

**Building and Equipment**

When a capital asset is purchased, its cost includes the purchase price plus all costs to prepare the asset for its intended use. However, a company may construct its own building or equipment. In the case of a building, for example, costs include those incurred for excavation, building permits, insurance and property taxes during construction, engineering fees, the cost of labour incurred by having company employees supervise and work on the construction of the building, and the cost of any interest incurred to finance the construction during the construction period.



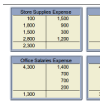
An exploration is available on the Lyryx site. Log into your Lyryx course to run Cost of Property, Plant and Equipment (PPE).

**Property, Plant, and Equipment (PPE) Subsidiary Ledger**

The accounts receivable and accounts payable subsidiary ledgers (more commonly referred to as subledgers) were introduced in Chapter 5 and the merchandise inventory subledger was introduced in Chapter 6. To review, a subledger lists individual accounts that fall under a common account, also known as the controlling account. For example, the accounts receivable controlling account for ABC Inc. shows a balance of $4,000 on the December 31, 2023 balance sheet. The accounts receivable subledger shows that the $4,000 is made up of three receivables: $800 for Ducker Inc.; $2,200 for Zest Inc.; and $1,000 for Frank Corporation. Since the controlling account

is a summary of the subledger, their balances must be identical. Subledgers allow details to be maintained in a separate record.

In a PPE subledger, an account would exist for each piece of land, each piece of machinery, each vehicle, and so on. The subledger account would include information regarding the date of purchase, cost, residual value, estimated useful life, depreciation, and other relevant information.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Preparing the PPE Section of a Balance Sheet.

## 8.2 Depreciation

LO2 – Explain, calculate, and record depreciation using the units-of-production, straight-line, and double-declining balance methods.

The role of **depreciation** is to allocate the cost of a PPE asset (except land) over the accounting periods expected to receive benefits from its use. Depreciation begins when the asset is in the location and condition necessary for it to be put to use. Depreciation continues even if the asset becomes idle or is retired from use, unless it is fully depreciated. Land is not depreciated, as it is assumed to have an unlimited life.

Depreciation is an application of the matching principle.

> According to generally accepted accounting principles, a company should select a method of depreciation that represents the way in which the asset's future economic benefits are estimated to be used up.

There are many different ways to calculate depreciation. The most frequently used methods are usage-based and time-based. Regardless of depreciation method, there are three factors necessary to calculate depreciation:

- cost of the asset
- residual value
- estimated useful life or productive output.

**Residual value** is the estimated worth of the asset at the end of its estimated useful life.

**Useful life** is the length of time that a long-lived asset is estimated to be of benefit *to the current owner*. This is not necessarily the same as the asset's economic life. If a company has a policy of replacing its delivery truck every two years, its useful life is two years even though it may be used by the next owner for several more years.

**Productive output** is the amount of goods or services expected to be provided. For example, it may be measured in units of output, hours used, or kilometres driven.

## Usage-Based Depreciation Method – Units-of-Production

Usage-based depreciation methods, such as the Units-of-Production Method, are used when the output of an asset varies from period to period.

> Usage methods assume that the asset will contribute to the earning of revenues in relation to the amount of output during the accounting period. Therefore, the depreciation expense will vary from year to year.

To demonstrate, assume that Big Dog Carworks Corp. purchased a $20,000 piece of equipment on January 1, 2022 with a $2,000 residual value and estimated productive life of 10,000 units. If 1,500 units were produced during 2022, the depreciation expense for the year ended December 31, 2022 would be calculated using the following formula:

$$\frac{\text{Cost} - \text{Residual value}}{\text{Estimated units of output}} = \text{Depreciation per unit}; \quad \text{Depreciation per unit} \times \text{Number of units produced} = \text{Depreciation expense}$$

$$\frac{\$20{,}000 - \$2{,}000}{10{,}000 \text{ units}} = \$1.80 \text{ depreciation per unit}; \quad \$1.80 \text{ depreciation per unit} \times 1{,}500 \text{ units produced} = \$2{,}700 \text{ depreciation expense for 2022}$$

The following adjusting entry would be made on December 31, 2022:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Dec 31 | Depreciation Expense . . . . . | | 2,700 | |
| | Accumulated Depreciation . . . . . | | | 2,700 |
| | To record depreciation expense using the Units-of-Production method; ($20,000 - $2,000)/10,000 units = $1.80/unit; $1.80/unit x 1,500 units = $2,700. | | | |

The **carrying amount** or **net book value** of the asset (cost less accumulated depreciation) on the December 31, 2022 balance sheet would be $17,300 ($20,000 - 2,700).

Note that the residual value is only used to calculate depreciation expense. It is not recorded in the accounts of the company or included as part of the carrying amount (net book value) on the balance sheet.

If 2,000 units were produced during 2023, depreciation expense for that year would be $3,600 ($1.80 per unit × 2,000 units). At December 31, 2023, the following adjusting entry would be recorded:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Dec 31 | Depreciation Expense . . . . . | | 3,600 | |
| | Accumulated Depreciation . . . . . | | | 3,600 |
| | To record depreciation expense using the Units-of-Production method; ($20,000 - $2,000)/10,000 units = $1.80/unit; $1.80/unit x 2,000 units = $3,600. | | | |

The carrying amount (or net book value) at December 31, 2023 would be $13,700 ($20,000 – 2,700 – 3,600). If the equipment produces 1,000 units in 2024, 2,500 units in 2025, and 3,000 units in 2026, depreciation expense and carrying amounts would be as follows each year:

| *(a)* | *(b)* | *(c)* | *(d)* | *(e)* | *(f)* |
|---|---|---|---|---|---|
| *Year* | *Carrying amount at start of year* | *Usage (units)* | *Rate* | *Dep'n expense* | *Carrying amount at end of year (b) – (e)* |
| 2022 | $20,000 | 1,500 | $1.80 | $2,700 | $17,300 |
| 2023 | 17,300 | 2,000 | 1.80 | 3,600 | 13,700 |
| 2024 | 13,700 | 1,000 | 1.80 | 1,800 | 11,900 |
| 2025 | 11,900 | 2,500 | 1.80 | 4,500 | 7,400 |
| 2026 | 7,400 | 3,000 | 1.80 | 5,400 | 2,000 |
| | | 10,000 | | $18,000 | |

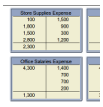
If the equipment produces exactly 10,000 units over its useful life and is then retired, depreciation expense over all years will total $18,000 (10,000 × $1.80) and the carrying amount will equal residual value of $2,000.

It is unlikely that the equipment will produce exactly 10,000 units over its useful life. Assume instead that 4,800 units were produced in 2026. Depreciation expense and carrying amounts would be as follows each year:

| *(a)* | *(b)* | *(c)* | *(d)* | *(e)* | *(f)* |
|---|---|---|---|---|---|
| *Year* | *Carrying amount at start of year* | *Usage (units)* | *Rate* | *Dep'n expense* | *Carrying amount at end of year (b) – (e)* |
| 2022 | $20,000 | 1,500 | $1.80 | $2,700 | $17,300 |
| 2023 | 17,300 | 2,000 | 1.80 | 3,600 | 13,700 |
| 2024 | 13,700 | 1,000 | 1.80 | 1,800 | 11,900 |
| 2025 | 11,900 | 2,500 | 1.80 | 4,500 | 7,400 |
| 2026 | 7,400 | 4,800 | 1.80 | 5,400 | 2,000 |
| | | 11,800 | | $18,000 | |

Carrying amount (or net book value) cannot be less than residual value

Notice that the depreciation expense for 2026 is **not** $8,640 (calculated as the 4,800 units x $1.80/unit = $8,640). The depreciation expense for 2026 cannot exceed $5,400 because the remaining carrying amount must be equal to or greater than the residual value. In other words, the **maximum allowable accumulated depreciation** cannot exceed cost less residual. A PPE asset cannot be depreciation below its residual value.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Units-of-Production Method.

### Time-Based Depreciation Method - Straight-Line

The **straight-line method of depreciation** – introduced in Chapter 3 – assumes that the asset will contribute to the earning of revenues equally each time period. Therefore, equal amounts of depreciation are recorded during each year of the asset's useful life. Straight-line depreciation is based on time – the asset's estimated useful life.

Straight-line depreciation is calculated as:

$$\frac{\text{Cost} - \text{Estimated residual value}}{\text{Estimated useful life in years}} = \text{Depreciation expense/year}$$

To demonstrate, assume the same $20,000 piece of equipment used earlier, with an estimated useful life of five years and an estimated residual value of $2,000. Straight-line depreciation would be $3,600 per year calculated as:

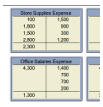
$$\frac{\$20{,}000 - \$2{,}000}{5 \text{ years}} = \$3{,}600 \text{ depreciation expense/year}$$

Over the five-year useful life of the equipment, depreciation expense and carrying amounts will be as follows:

| *(a)* | *(b)* | *(c)* | *(d)* |
|---|---|---|---|
| *Year* | *Carrying amount at start of year* | *Dep'n expense* | *Carrying amount at end of year (b) – (c)* |
| 2022 | $20,000 | $3,600 | $16,400 |
| 2023 | 16,400 | 3,600 | 12,800 |
| 2024 | 12,800 | 3,600 | 9,200 |
| 2025 | 9,200 | 3,600 | 5,600 |
| 2026 | 5,600 | 3,600 | 2,000 |
| | | $18,000 | |

The carrying amount at December 31, 2026 will be the residual value of $2,000 ($20,000 – 18,000).

Under the straight-line method, depreciation expense for each accounting period remains the same dollar amount over the useful life of the asset.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Straight-Line Method.

## Accelerated Time-Based Depreciation Method – Double-Declining Balance (DDB)

An **accelerated depreciation** method assumes that a plant and equipment asset will contribute more to the earning of revenues in the earlier stages of its useful life than in the later stages. This means that more depreciation is recorded in earlier years with the depreciation expense decreasing each year. This approach is most appropriate where assets experience a high degree of obsolescence (such as computers) or where the value of the asset is highest in the first year when it is new and efficient and declines significantly each year as it is used and becomes worn (such as equipment).

Under an accelerated depreciation method, depreciation expense decreases each year over the useful life of the asset.

One type of accelerated depreciation is the **double-declining balance (DDB)** method. It is calculated as:

$$\text{Carrying Amount (or Net Book Value)} \times (2/n)$$

where n = estimated useful life. $2/n$ is the rate of depreciation and it remains constant over the asset's estimated useful life (unless there is a change in the useful life which is discussed in a later section of this chapter). The DDB rate of depreciation can also be described as twice the straight-line rate. For example, if the straight-line rate of depreciation is 15%, the DDB rate will be 30% (calculated as 2 × 15%).

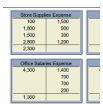
To demonstrate DDB depreciation calculations, assume the same $20,000 equipment with an estimated useful life of five years. The DDB rate of depreciation is calculated as $2/n$ = 2/5 = 0.40 or 40%. Alternatively, given that we know the straight-line rate is 20%, doubling it is 40%.

The declining balance rate is applied to the carrying amount of the asset *without regard to residual value*. Regardless of which depreciation method is used, remember that the asset cannot be depreciated below its carrying amount (or net book value) which in this case is $2,000. The DDB depreciation for the five years of the asset's useful life follows.

| *(a)* | *(b)* | *(c)* | *(d)* | *(e)* |
|---|---|---|---|---|
| *Year* | *Carrying amount at start of year* | *DDB rate* | *Dep'n expense (b) x (c)* | *Carrying amount at end of year (b) – (d)* |
| 2022 | $20,000 | 40% | $8,000 | $12,000 |
| 2023 | 12,000 | 40% | 4,800 | 7,200 |
| 2024 | 7,200 | 40% | 2,880 | 4,320 |
| 2025 | 4,320 | 40% | 1,728 | 2,592 |
| 2026 | 2,592 | 40% | 592 | 2,000 |
| | | | $18,000 | |

Although for 2026 the depreciation expense would be calculated as $1,037 ($2,592 x 40%), only $592 is recorded to bring the carrying amount of the asset down to its residual value of $2,000.

At the end of five years, the carrying amount is once again equal to the residual value of $2,000.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Double-Declining Balance.

A comparison of the three depreciation methods is shown in Figure 8.1.

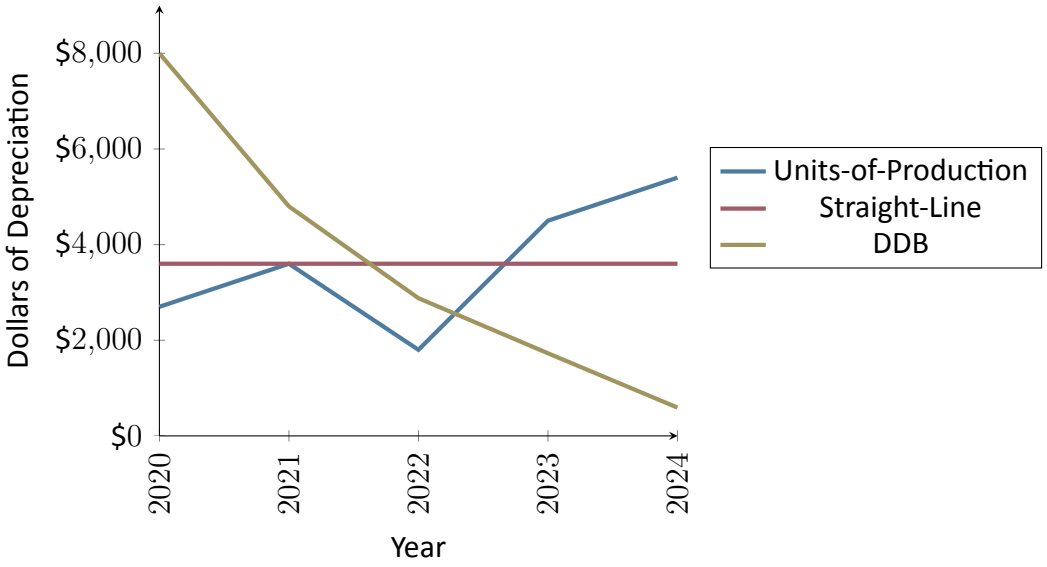


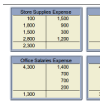

**Figure 8.1: Comparing Three Depreciation Methods**

## 8.3 Partial Year Depreciation

LO3 – Explain, calculate, and record depreciation for partial years.

Assets may be purchased or sold at any time during a fiscal year. Should depreciation be calculated for a whole year in such a case? The answer depends on corporate accounting policy. There are many alternatives. One is to calculate depreciation to the nearest whole month. Another, often called the **half-year rule**, records half a year's depreciation regardless of when an asset purchase or disposal occurs during the year.

To demonstrate the half-year approach to calculating depreciation for partial periods, assume again that Big Dog Carworks Corp. purchases equipment for $20,000 with an estimated useful life of five years and a residual value of $2,000. Recall that depreciation expense for 2022 was $3,600 using the straight-line method. Because of the half-year rule, depreciation expense for 2022 would be $1,800 ($3,600 x .5) even though the asset was purchased on the first day of the fiscal year. Using the double-declining balance method, depreciation expense for 2022 under the half-year rule would be $4,000 ($8,000 $\times$ .5). Applying the half-year rule to the units-of-production depreciation for 2022, would result in no change because the method is usage-based and not time-based (presumably usage would be less if the asset is purchased partway through the year, so this depreciation method already takes this into account).



An exploration is available on the Lyryx site. Log into your Lyryx course to run Partial Periods.

## 8.4 Revising Depreciation

LO4 – Explain, calculate, and record revised depreciation for subsequent capital expenditures.

Both the useful life and residual value of a depreciable asset are estimated at the time it is purchased. As time goes by, these estimates may change for a variety of reasons. In these cases, the depreciation expense is recalculated from the date of the change in the accounting estimate and applied going forward. *No change is made to depreciation expense already recorded.*

Consider the example of the equipment purchased for $20,000 on January 1, 2022, with an estimated useful life of five years and residual value of $2,000. If the straight-line depreciation method is used, the yearly depreciation expense is $3,600. After two years, the carrying amount at the end of 2023 is $12,800 ($20,000 - 3,600 - 3,600). Assume that on January 1, 2024, management estimates the remaining useful life of the equipment to be six years,

and the residual value to be $5,000.

Depreciation expense for the remaining six years would be calculated as:

$$\begin{aligned}&\frac{(\text{Remaining carrying amount} - \text{Revised residual value})}{\text{Estimated remaining useful life}}\\ &= \frac{(\$12{,}800 - 5{,}000)}{6 \text{ years}}\\ &= \$1{,}300 \text{ per year}\end{aligned}$$

An exploration is available on the Lyryx site. Log into your Lyryx course to run Revised Dep. - Change in Life/Residual.

## Subsequent Capital Expenditures

As noted earlier, normal, recurring expenditures that relate to day-to-day servicing of depreciable assets are not capitalized, but rather are expensed when incurred. Oil changes and new tires for vehicles are examples of recurring expenditures that are expensed. Expenditures that are material, can be reliably measured, and enhance the future economic benefit provided by the asset, are added to the cost of the asset rather than being expensed when incurred. A subsequent capital expenditure can take one of two forms:

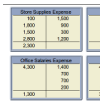
1. Addition (e.g., adding a garage to the back of an existing building or adding a skywalk in a factory)
2. Replacement (e.g., replacing the refrigeration unit in a long-haul truck or replacing the windows in a building).

To demonstrate the accounting for an addition, recall our original example where equipment was purchased on January 1, 2022 for $20,000; the estimated useful life and residual value were five years and $2,000, respectively. Assume that on January 4, 2023, a heat exchanger was added to the equipment that allowed it to produce a new product in addition to the existing product line. This $12,000 addition, paid in cash, had an estimated life of ten years with no residual value. The useful life and residual value of the original equipment did not change as a result of the addition. The entry to record the addition on January 4 is:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jan 4 | Equipment – Heat Exchanger . . . . . | | 12,000 | |
| | Cash . . . . . | | | 12,000 |
| | To record the addition of a heat exchanger to the equipment. | | | |

The entry to record revised depreciation on December 31, 2023 is:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Dec 31 | Depreciation Expense - Equipment . . . . . | | 4,800 | |
| | Accumulated Depreciation - Equipment . . . . . | | | 4,800 |
| | To record revised straight-line depreciation; ($20,000 - $2,000)/5 years = $3,600/year; ($12,000 - $0)/10 years = $1,200/year; $3,600 + $1,200 = $4,800. | | | |



An exploration is available on the Lyryx site. Log into your Lyryx course to run Revised Dep. - Addition.

The accounting for a replacement is more involved. The cost of the replaced item and its related accumulated depreciation must be removed from the accounting records when the replacement is capitalized recording any resulting gain or loss *as well as* calculating revised depreciation. Let's demonstrate, again using the $20,000 equipment purchased on January 1, 2022 with a five-year life and $2,000 residual value. Assume that on January 5, 2025 the engine in the equipment burned out and needed to be replaced. The PPE subledger showed that the engine had an original cost of $8,000, useful life of five years, and residual value of $1,000 resulting in a carrying amount as at January 5, 2025 of $3,800 ($8,000 cost – $4,200 accumulated depreciation). The entry to dispose of the old engine and remove it from the accounting records is (the old engine was scrapped and not sold because it was burned out):

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jan 5 | Accum. Dep. – Equip. – Engine . . . . . | | 4,200 | |
| | Loss on Disposal . . . . . | | 3,800 | |
| | Equipment – Engine . . . . . | | | 8,000 |
| | To record the scrapping of the burned out equipment engine; ($8,000 - $1,000)/5 years = $1,400/year depreciation X 3 years = $4,200 accumulated depreciation. | | | |

Notice in the entry above that the cost of the old engine and the accumulated depreciation must be individually removed from the accounting records. Since the asset is not completely depreciated and was scrapped, the $3,800 carrying amount represents a loss. If the engine had been

sold, the gain or loss would have been calculated as the difference between its carrying value and the cash proceeds. Losses (as well as gains) are reported on the income statement under *Other Revenues and Expenses*. **A common error made by students is to debit loss on disposal and credit equipment–engine for the carrying amount; this is incorrect.** After posting the entry to dispose of the old engine, the account balances in the Equipment account and its related Accumulated Depreciation account would be as follows.

| Equipment | | | |
|---|---|---|---|
| Jan. 1, 2022 | 20,000 | 8,000 | Jan. 5, 2025 |
| Balance | 12,000 | | |

| Accumulated Depreciation – Equipment | | | |
|---|---|---|---|
| | | 3,600 | Dec. 31, 2022 |
| | | 3,600 | Dec. 31, 2023 |
| | | 3,600 | Dec. 31, 2024 |
| Jan. 5, 2025 | 4,200 | | |
| | | 6,600 | Balance |

The entry to record the new engine purchased for $12,000 cash (estimated life 8 years; estimated zero residual value) is:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jan 5 | Equipment - Engine . . . . . | | 12,000 | |
| | Cash . . . . . | | | 12,000 |
| | To record the new engine with estimated useful life of 8 years and estimated residual value of zero. | | | |

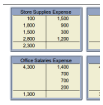
Alternatively, the entries to dispose of the old engine and record the addition of the new engine can be combined into one compound entry as follows:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jan 5 | Accum. Dep. – Equip. – Engine (old) . . . . . | | 4,200 | |
| | Loss on Disposal . . . . . | | 3,800 | |
| | Equipment – Engine (new) . . . . . | | 12,000 | |
| | Equipment – Engine (old) . . . . . | | | 8,000 |
| | Cash . . . . . | | | 12,000 |
| | To record the scrapping of the burned out equipment engine and its replacement with a new engine. | | | |

Assuming the useful life and residual value of the equipment did not change and the new engine had an estimated useful life of eight years and an estimated residual value of zero, the entry to record revised depreciation on December 31, 2025 is:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Dec 31 | Depreciation Expense - Equipment . . . . . | | 3,200 | |
| | Accum. Dep. - Equipment . . . . . | | | 3,200 |
| | To record revised straight-line depreciation; Remaining carrying amount of equipment = $12,000 remaining cost - $6,600 remaining balance in accumulated depreciation = $5,400; Revised depreciation on equipment = ($5,400 remaining carrying amount - $2,000 residual)/2 years remaining useful life = $1,700 depreciation/year; Depreciation on new engine = ($12,000 - $0)/8 years = $1,500/year; Total depreciation = $1,700 + $1,500 = $3,200. | | | |

The previous example emphasizes the importance of maintaining a PPE subledger in order to apply the concept of *componentization*. **Componentization** requires each *major component* that has a different estimated useful life than the rest of an asset to be recorded and depreciated separately. For instance, assume a commercial airliner is purchased for $100 million ($100M) on January 1, 2022 with the following components: airframe, engines, landing gear, interior, and other parts. Original cost, estimated residual value, estimated useful lives, depreciation method to be used, serial numbers where applicable, and other relevant information are recorded in the PPE subledger.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Revised Dep. - Replacement.

## 8.5 Impairment of Long-lived Assets

LO5 – Explain, calculate, and record the impairment of long-lived assets.

Under generally accepted accounting principles, management must compare the **recoverable amount** of a long-lived asset with its carrying amount (cost less accumulated depreciation) at the end of each reporting period. The recoverable amount is the fair value of the asset at the time less any estimated costs to sell it. If the recoverable amount is lower than the carrying amount, an **impairment loss** must be recorded.

An impairment loss may occur because of a variety of reasons such as technological obsolescence, an economic downturn, or a physical disaster. When an impairment is recorded, subsequent years' depreciation expense must also be revised.

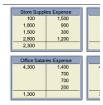
Recall again our $20,000 equipment purchased January 1, 2022 with an estimated useful life of five years and a residual value of $2,000. Assume straight-line depreciation has been recorded for 2022 and 2023 at $3,600 per year. At December 31, 2023, the carrying amount of the equipment is $12,800 ($20,000 – 3,600 – 3,600). At that point management determines that new equipment with equivalent capabilities can be purchased for much less than the old equipment due to technological changes. As a result, the recoverable value of the original equipment at December 31, 2023 is estimated to be $7,000. Because the recoverable amount is less than its carrying amount of $12,800, an impairment loss of $5,800 ($12,800 – 7,000) is recorded in the accounting records of BDCC as follows:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Dec 31 | Impairment Loss . . . . . | | 5,800 | |
| | Equipment . . . . . | | | 5,800 |
| | To record impairment loss on equipment. | | | |

This reduces the carrying amount of the equipment to $7,000 so that revised depreciation expense of $1,667 per year would be recorded at the end of 2024, 2025, and 2026, calculated as follows (assume no change to original useful life and residual value):

$$\frac{(\text{Revised carrying amount} - \text{Revised residual value})}{\text{Remaining useful life}} = \frac{(\$7{,}000 - \$2{,}000)}{\text{3 years remaining useful life}} = \$1{,}667 \text{ per year}$$

Impairment losses can be reversed in subsequent years if the recoverable amount of the asset exceeds the carrying amount. Also, if the fair value of a PPE asset can be reliably measured, it can be revalued to more than its original cost. However, the revaluation process needs to be conducted thereafter on a regular basis. These topics are not dealt with here, as they are beyond the scope of introductory financial accounting.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Impairment Loss.

## 8.6 Derecognition of Property, Plant, and Equipment

LO6 – Account for the derecognition of PPE assets.

Property, Plant, and Equipment is *derecognized* (that is, the cost and any related accumulated depreciation are removed from the

accounting records) when it is sold or when no future economic benefit is expected. To account for the disposal of a PPE asset, the following must occur:

1. If the disposal occurs part way through the accounting period, depreciation must be updated to the date of disposal by

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Depreciation Expense . . . . . | | XXX | |
| | Accumulated Depreciation . . . . . | | | XXX |
| | To update depreciation for partial period. | | | |

2. Record the disposal including any resulting gain or loss by

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Cash (if any, or other assets received) . . . . | | XXX | |
| | Accumulated Depreciation . . . . . | | XXX | |
| | Loss on Disposal . . . . . | | XXX | |
| | OR Gain on Disposal . . . . . | | | XXX |
| | PPE Asset (such as Equipment) . . . . . | | | XXX |
| | To record disposal of PPE asset. | | | |

A loss results when the carrying amount of the asset is greater than the proceeds received, if any. A gain results when the carrying amount is less than any proceeds received.

## Sale or Retirement of PPE

When a PPE asset has reached the end of its useful life it can be either sold or retired. In either case, the asset's cost and accumulated depreciation must be removed from the records, after depreciation expense has been recorded up to the date of disposal or retirement.

Recall the calculation of straight-line depreciation for the equipment purchased for $20,000 with an estimated useful life of five years and a residual value of $2,000. Assume that the general ledger T-accounts of equipment and accumulated depreciation contain the following entries for the last five years:

| Equipment | | | |
|---|---|---|---|
| 2022 | 20,000 | | |

| Accumulated Depreciation Equipment | | |
|---|---|---|
| | 2022 | 3,600 |
| | 2023 | 3,600 |
| | 2024 | 3,600 |
| | 2025 | 3,600 |
| | 2026 | 3,600 |
| | | 18,000 |

Assume that the equipment is sold at the end of 2026, when accumulated depreciation totals $18,000. The carrying amount at this date is $2,000 ($20,000 cost – $18,000 accumulated depreciation). Three different situations are possible.

1. Sale at carrying amount

   Assume the equipment is sold for its residual value of $2,000. No gain or loss on disposal would occur.

| | | |
|---|---|---|
| Cost | $ | 20,000 |
| Accumulated depreciation | | (18,000) |
| Carrying amount | | 2,000 |
| Proceeds of disposition | | (2,000) |
| Gain on disposal | $ | -0- |

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Dec 31 | Cash | | 2,000 | |
| | Accumulated Dep. – Equipment | | 18,000 | |
| | Equipment | | | 20,000 |
| | To record the disposal of equipment sold for $2,000 cash. | | | |

2. Sale above carrying amount

   Assume the equipment is sold for $3,000. A gain of $1,000 would occur.

| | | |
|---|---|---|
| Cost | $ | 20,000 |
| Accumulated depreciation | | (18,000) |
| Carrying amount | | 2,000 |
| Proceeds of disposition | | (3,000) |
| Gain on disposal | $ | (1,000) |

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Dec 31 | Cash | | 3,000 | |
| | Accumulated Dep. – Equipment | | 18,000 | |
| | Gain on Disposal | | | 1,000 |
| | Equipment | | | 20,000 |
| | To record the disposal of equipment sold for $3,000 cash. | | | |

3. Sale below carrying amount

   Assume the equipment is sold for $500. A loss on disposal of $1,500 would occur.

| | | |
|---|---|---|
| Cost | $ | 20,000 |
| Accumulated depreciation | | (18,000) |
| Carrying amount | | 2,000 |
| Proceeds of disposition | | (500) |
| Loss on disposal | $ | 1,500 |

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Dec 31 | Cash | | 500 | |
| | Accumulated Dep. – Equipment | | 18,000 | |
| | Loss on Disposal | | 1,500 | |
| | Equipment | | | 20,000 |
| | To record the disposal of equipment sold for $500 cash. | | | |

In each of these cases, the cash proceeds must be recorded (by a debit) and the cost and accumulated depreciation must be removed from the accounts. A credit difference represents a gain on disposal while a debit difference represents a loss.

## Disposal Involving Trade-In

It is a common practice to exchange a used PPE asset for a new one. This is known as a **trade-in**. The value of the trade-in agreed by the purchaser and seller is called the **trade-in allowance**. This amount is applied to the purchase price of the new asset, and the purchaser pays the difference. For instance, if the cost of a new asset is $10,000 and a trade-in allowance of $6,000 is given for the old asset, the purchaser will pay $4,000 ($10,000 – 6,000).

Sometimes as an inducement to the purchaser, the trade-in allowance is higher than the fair value of the used asset on the open market. Regardless, the cost of the new asset must be recorded at its fair value, calculated as follows:

$$\text{Cost of new asset} = \text{Cash paid} + \text{Fair value of asset traded}$$

If there is a difference between the fair value of the old asset and its carrying value, a gain or loss results. For example, assume again that equipment was purchased by BDCC for $20,000 and has accumulated depreciation of $18,000 at the end of 2026. It is traded on January 1, 2027 for new equipment with a list price of $25,000. A trade-in allowance of $2,500 is given on the old equipment, which has a fair value of only $1,800. In this case, the cost of the new asset is calculated as follows:

| Cash paid | + | Fair value of asset traded | = | Cost of new asset |
|---|---|---|---|---|
| $22,500 | + | 1,800 | = | $24,300 |

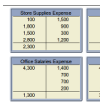
Cash paid will equal the difference between the selling price of the new equipment less the trade-in allowance, or $22,500 ($25,000 - 2,500). The fair value of the asset traded-in is $1,800. The cost of the new asset is therefore $24,300 ($22,500 + 1,800). There will be a loss on disposal of $200 on the old equipment, calculated as follows:

| | | |
|---|---|---|
| Cost | $ | 20,000 |
| Accumulated depreciation | | (18,000) |
| Carrying amount | | 2,000 |
| Fair value | | (1,800) |
| Loss on disposal | $ | 200 |

The journal entry on January 1, 2027 to record the purchase of the new equipment and trade-in of the old equipment is:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jan 1 | Equipment (new) . . . . . | | 24,300 | |
| | Accumulated Dep. – Equipment (old) . . . . | | 18,000 | |
| | Loss on Disposal . . . . . | | 200 | |
| | Equipment (old) . . . . . | | | 20,000 |
| | Cash . . . . . | | | 22,500 |
| | To record trade-in. | | | |

By this entry, the cost of the new equipment ($24,300) is entered into the accounts, the accumulated depreciation and cost of the old equipment is removed from the accounts, and the amount of cash paid is recorded. The debit difference of $200 represents the loss on disposal of the old equipment.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Exchange of PPE Assets.

## 8.7 Intangible Assets

LO7 – Explain and record the acquisition and amortization of intangible assets.

Another major category of long-lived assets that arises from legal rights and does not have physical substance is that of **intangible assets**. The characteristics of various types of intangible assets are discussed below.

### Patents

A **patent** is an intangible asset that is granted when a company has an exclusive legal privilege to produce and sell a product or use a process for a specified period. This period varies depending on the nature of the product or process patented, and on the legislation in effect. Modifications to the original product or process can result in a new patent being granted, in effect extending the life of the original patent.

Patents are recorded at cost. If purchased from an inventor, the patent's cost is easily identified; if developed internally, the patent's cost includes all expenditures incurred in the development of the product or process, including salaries and benefits of staff involved.

### Copyrights

A **copyright** is another intangible asset that confers on the holder an exclusive legal privilege to publish a literary or artistic work. In this case, the state grants control over a published or artistic work for the life of the copyright holder (often the original artist) and for a specified period afterward. This control extends to the reproduction, sale, or other use of the copyrighted material.

### Trademarks

A **trademark** is a symbol or a word used by a company to identify itself or one of its products in the marketplace. Symbols are often logos printed on company stationery or displayed at company offices, on vehicles, or in advertising. A well-known example is Coke®. The right to use a trademark can be protected by registering it with the appropriate agency. The symbol '®' denotes that a trademark is registered.

### Franchises

A **franchise** is a legal right granted by one company (the franchisor) to another company (the franchisee) to sell particular products or to provide certain services in a given region using a specific trademark or trade name. In return, the franchisee pays a fee to the franchisor. McDonald's® is an example of a franchised fast-food chain.

Another example of a franchise is one granted by government for the provision of certain services within a given geographical location: for example, television stations and telephone services authorized by the telecommunications branch of the state, or garbage collection authorized within a given community.

In addition to the payment of an initial franchise fee, which is capitalized, a franchise agreement usually requires annual payments. These payments are considered operating expenses.

## Computer Software

Computer software programs may be developed by a company, patented, and then sold to customers for use on their computers. Productivity software like Microsoft Office® is an example. The cost of acquiring and developing computer software programs is recorded as an intangible asset, even if it is stored on a physical device like a computer. However, computer software that is integral to machinery – for instance, software that is necessary to control a piece of production equipment – is included as the cost of the equipment and classified as PPE.

## Capitalization of Intangible Assets

Normally, intangible assets are measured at cost at the time of acquisition and are reported in the asset section of a company's balance sheet under the heading "Intangible Assets." The cost of an acquired intangible asset includes its purchase price and any expenditures needed to directly prepare it for its intended use.

There are special rules regarding intangible assets with a finite life and an indefinite life. Detailed discussion of these topics is beyond the scope of this textbook. It will be assumed that all intangibles being discussed in this textbook have a finite life.

## Amortization of Intangible Assets

Plant and equipment assets are depreciated. Intangible assets are also depreciated but the term used is *amortization* instead of depreciation. **Amortization** (of intangible assets) is the systematic process of allocating the cost of intangible assets over their estimated useful lives using the straight-line, double-declining-balance, units-of-production or other method deemed appropriate.

Like PPE considerations, useful life and residual value of intangible assets are estimated by management and must be reviewed annually for reasonableness. Any effects on amortization expense because of changes in estimates are accounted for prospectively. That is, prior accounting periods' expenses are not changed.

To demonstrate the accounting for intangibles, assume a patent is purchased for $20,000 on July 1, 2023. The entry to record the purchase is:

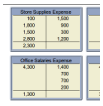
| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| July 1 | Patent . . . . . | | 20,000 | |
| | Cash . . . . . | | | 20,000 |
| | To record the purchase of a patent, an intangible asset. | | | |

Assuming the patent will last 40 years with no residual value, and amortization is calculated to the nearest whole month, amortization expense will be recorded at the December 31, 2023 year end as:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Dec 31 | Amortization Expense - Patent . . . . . | | 250 | |
| | Accumulated Amortization - Patent . . . | | | 250 |
| | To record amortization on the patent; ($20,000 – 0)/40 years = $500/year; $500 x 6/12 = $250. | | | |

Notice that an accumulated amortization account[1] is credited and not accumulated depreciation.

Impairment losses, and gains and losses on disposal of intangible assets, are calculated and recorded in the same manner as for property, plant, and equipment.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Intangible Assets.

## 8.8 Goodwill

LO8 – Explain goodwill and identify where on the balance sheet it is reported.

Assume that Big Dog Carworks Corp. purchases another company for $10 million ($10M). BDCC takes over all operations, including management and staff. There are no liabilities. The fair values of the purchased assets consist of the following:

| | |
|---|---|
| Patents | $2M |
| Machinery | $7M |
| Total | $9M |

Why would BDCC pay $10M for assets with a fair value of only $9M? The extra $1M represents *goodwill*. **Goodwill** is the excess paid over the fair value of the net assets when one company

[1] IFRS 2014, IAS 38, para. 98; effective January 1, 2016 but can be applied sooner.

buys another, and represents the value of the purchasee's ability to generate superior earnings compared to other companies in the same industry.

Goodwill is the combination of a company's assets which cannot be separately identified – such as a well-trained workforce, better retail locations, superior products, or excellent senior managers – the value of which is recognized only when a significant portion of the business is purchased by another company.

Recall that among other characteristics, intangible assets must be separately identifiable. Because components of goodwill are not separately identifiable, goodwill is not considered an intangible asset. However, it does have future value and therefore is recorded as a long-lived asset under its own heading of "Goodwill" on the balance sheet.

The detailed discussion of goodwill is an advanced accounting topic and beyond the scope of this textbook.

## 8.9 Disclosure

LO9 – Describe the disclosure requirements for long-lived assets in the notes to the financial statements.

When long-lived assets are presented on the balance sheet, the notes to the financial statements need to disclose the following:

- details of each class of assets (e.g., land; equipment including separate parts; patents; goodwill)
- measurement basis (usually historical cost)
- type of depreciation and amortization methods used, including estimated useful lives
- cost and accumulated depreciation at the beginning and end of the period, including additions, disposals, and impairment losses
- whether the assets are constructed by the company for its own use (if PPE) or internally developed (if intangible assets).

Examples of appropriate disclosure of long-lived assets were shown in notes 3(d) and 4 of BDCC's financial statements in Chapter 4.

## Summary of Chapter 8 Learning Objectives

### LO1 – Describe how the cost of property, plant, and equipment (PPE) is determined, and calculate PPE.

Property, plant and equipment (PPE) are tangible, long-lived assets that are acquired for the purpose of generating revenue either directly or indirectly. A capital expenditure is debited to a PPE asset account because it results in the acquisition of a non-current asset and includes any additional costs involved in preparing the asset for its intended use at or after initial acquisition. A revenue expenditure does not have a future benefit beyond one year so is expensed. The details regarding a PPE asset are maintained in a PPE subsidiary ledger.

### LO2 – Explain, calculate, and record depreciation using the units-of-production, straight-line, and double-declining balance methods.

Depreciation, an application of matching, allocates the cost of a PPE asset (except land) over the accounting periods expected to receive benefits from its use. A PPE asset's cost, residual value,

and useful life or productive output are used to calculate depreciation. There are different depreciation methods. Units-of-production is a usage-based method. Straight-line and double-declining balance are time-based methods. The formulas for calculating depreciation using these methods are:

| Units-of-Production | Straight-Line | Double-Declining Balance |
|---|---|---|
| $\frac{\text{Cost} - \text{Estimated Residual Value}}{\text{Estimated Total Units of Production}}$ | $\frac{\text{Cost} - \text{Estimated Residual Value}}{\text{Estimated Total Useful Life}}$ | Carrying Amount $\times$ 2/n where n = estimated useful life |
| = Depreciation Expense/Unit | = Depreciation Expense/Period | = Depreciation Expense/Period |

Maximum accumulated depreciation is equal to cost less residual. The carrying amount of a PPE asset, also known as the net book value, equals the cost less accumulated depreciation.

## LO3 – Explain, calculate, and record depreciation for partial years.

When assets are acquired or derecognized partway through the accounting period, partial period depreciation is recorded. There are several ways to account for partial period depreciation. Two common approaches are to calculate depreciation to the nearest whole month or to apply the half-year rule. The half-year rule assumes six months of depreciation in the year of acquisition and year of derecognition regardless of the actual date these occurred.

## LO4 – Explain, calculate, and record revised depreciation for subsequent capital expenditures.

When there is a change that impacts depreciation (such as a change in the estimated useful life or estimated residual value, or a subsequent capital expenditure) revised depreciation is calculated prospectively. It is calculated as:

$$\frac{\text{Remaining Carrying Amount} - \text{Estimated Residual Value}*}{\text{Estimated Remaining Useful Life}*}$$

$*$ where the residual value and/or useful life may have changed

## LO5 – Explain, calculate, and record the impairment of long-lived assets.

The **recoverable amount** of a long-lived asset must be compared with its carrying amount (cost less accumulated depreciation) at the end of each reporting period. The recoverable amount is

the fair value of the asset at the time less any estimated costs to sell it. If the recoverable amount is lower than the carrying amount, an **impairment loss** must be recorded as:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Impairment Loss . . . . . | | XXX | |
| | Equipment . . . . . | | | XXX |
| | To record impairment loss. | | | |

Impairment losses can be reversed in subsequent years if the recoverable amount of the asset exceeds the carrying amount. Also, if the fair value of a PPE asset can be reliably measured, it can be revalued to more than its original cost.

## LO6 – Account for the derecognition of PPE assets.

Property, plant, and equipment is *derecognized* (that is, the cost and any related accumulated depreciation are removed from the accounting records) when it is sold or when no future economic benefit is expected. To account for the disposal of a PPE asset, the following must occur:

1. If the disposal occurs part way through the accounting period, depreciation must be updated to the date of disposal by

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Depreciation Expense . . . . . | | XXX | |
| | Accumulated Depreciation . . . . . | | | XXX |
| | To update depreciation for partial period. | | | |

2. Record the disposal including any resulting gain or loss by

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Cash (if any, or other assets received) . . . . | | XXX | |
| | Accumulated Depreciation . . . . . | | XXX | |
| | Loss on Disposal . . . . . | | XXX | |
| | OR Gain on Disposal . . . . . | | | XXX |
| | PPE Asset (such as Equipment) . . . . . | | | XXX |
| | To record disposal of PPE asset. | | | |

A loss results when the carrying amount of the asset is greater than the proceeds received, if any. A gain results when the carrying amount is less than any proceeds received.

It is a common practice to exchange a used PPE asset for a new one, known as a **trade-in**. The value of the trade-in is called the **trade-in allowance** and is applied to the purchase price of the new asset so that the purchaser pays the difference. Sometimes the trade-in allowance is higher

than the fair value of the used asset. The cost of the new asset must be recorded at its fair value, calculated as:

$$\text{Cost of new asset} = \text{Cash paid} + \text{Fair value of asset traded}$$

If there is a difference between the fair value of the old asset and its carrying value, a gain or loss results.

### LO7 – Explain and record the acquisition and amortization of intangible assets.

Intangible assets are long-lived assets that arise from legal rights and do not have physical substance. Examples include patents, copyrights, trademarks, and franchises. Intangibles are amortized using various methods. The entry to record amortization is a debit to amortization expense and a credit to either the intangible asset or to an accumulated amortization account.

### LO8 – Explain goodwill and identify where on the balance sheet it is reported.

Goodwill is a long-lived asset that does not have physical substance but it is NOT an intangible. When one company buys another company, goodwill is the excess paid over the fair value of the net assets purchased and represents the value of the purchasee's ability to generate superior earnings compared to other companies in the same industry. Goodwill appears in the asset section of the balance sheet under its own heading of "Goodwill".

### LO9 – Describe the disclosure requirements for long-lived assets in the notes to the financial statements.

When long-lived assets are presented on the balance sheet, the notes to the financial statements need to disclose the following:

- details of each class of assets (e.g., land; equipment including separate parts; patents; goodwill)
- measurement basis (usually historical cost)
- type of depreciation and amortization methods used, including estimated useful lives
- cost and accumulated depreciation at the beginning and end of the period, including additions, disposals, and impairment losses

whether the assets are constructed by the company for its own use (if PPE) or internally developed (if intangible assets).

## Discussion Questions

1. The cost of a long-lived asset is said to be *capitalized*. What does this mean?
2. How does a capital expenditure differ from a revenue expenditure?
3. Assume that you have purchased a computer for business use. Illustrate, using examples, capital and revenue expenditures associated with its purchase.
4. A company purchases land and buildings for a lump sum. What does this mean? What is the acceptable manner of accounting for a lump sum purchase?
5. How does the concept of materiality affect the recording of an expenditure as a capital or revenue item?
6. List the three criteria used to determine whether a replacement part for equipment is considered a capital or revenue expenditure.
7. When one long-lived asset is exchanged for another, how is the cost of the newly-acquired asset determined?
8. What is depreciation?
9. Long-lived assets can be considered future benefits to be used over a period of years. The value of these benefits in the first years may not be the same as in later years. Using a car as an example, indicate whether you agree or disagree.
10. Assume that you have recently purchased a new sports car. Is a usage or a time-based method preferable for recording depreciation? Why?
11. Why is residual value ignored when depreciation is calculated using the declining balance method but not the straight-line method? Is this inconsistent? Why or why not?
12. What is the formula for calculating the declining balance method of depreciation? ...the straight-line method?
13. What is the double-declining balance rate of depreciation for an asset that is expected to have a ten-year useful life?
14. Explain two types of partial-year depreciation methods.
15. What changes in estimates affect calculation of depreciation expense using the straight-line method? Explain the appropriate accounting treatment when there is a revision of an estimate that affects the calculation of depreciation expense.

16. Explain the effect on the calculation of depreciation expense for capital expenditures made subsequent to the initial purchase of plant or equipment.

17. Explain the process for determining whether the value of a long-lived asset has been impaired, and the required adjustments to the accounting records.

18. Your friend is concerned that the calculation of depreciation and amortization relies too much on the use of estimates. Your friend believes that accounting should be precise. Do you agree that the use of estimates makes accounting imprecise? Why or why not?

19. Why are the significant parts of property, plant, and equipment recorded separately?

20. When does the disposal of PPE not result in a gain or loss?

21. What is a trade-in? Explain whether a trade-in is the same as the sale of an asset.

22. Why might a trade-in allowance, particularly in the case of a car, be unrealistic? Why would a dealer give more trade-in allowance on a used car than it is worth?

23. How is the cost of a new capital asset calculated when a trade-in is involved?

24. How are intangible assets different from property, plant, and equipment? the same?

25. What is a patent? Assume a patent's legal life is twenty years. Does a patent's useful life correspond to its legal life? Why or why not? Support your answer with an example.

26. How does a copyright differ from a trademark? Give an example of each.

27. What is goodwill? Why is a company's internally-generated goodwill usually not recorded in its accounting records?

28. How are intangible assets valued, and what are their financial statement disclosure requirements?

## Exercises

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**EXERCISE 8–1 (LO1)**

For all expenditures, accountants identify them as either capital or revenue expenditures. The entries for such transactions can be made to any one of the following accounts:

*Capital expenditures are recorded in an asset account on the balance sheet such as:*

**a.** Land

**b.** Buildings

**c.** Equipment

**d.** Trucks

**e.** Automobiles

*Revenue expenditures are recorded in an income statement account:*

**f.** An expense account

**Required**: For each transaction below, indicate the account to be adjusted. Assume all expenditures are material in amount. Explain your answers.

*Example:*

b Architect fees to design building.

_____ Battery purchased for truck.

_____ Commission paid to real estate agent to purchase land.

_____ Cost of equipment test runs.

_____ Cost to remodel building.

_____ Cost to replace manual elevator with automatic elevator.

_____ Cost of sewage system.

_____ Equipment assembly expenditure.

_____ Expenditures for debugging new equipment and getting it ready for use.

_____ Installation of air-conditioner in automobile.

_____ Insurance paid during construction of building.

_____ Legal fees associated with purchase of land.
_____ Oil change for truck.
_____ Payment for landscaping.
_____ Expenditures for removal of derelict structures.
_____ Repair made to building after moving in.
_____ Repair of collision damage to truck.
_____ Repair of torn seats in automobile.
_____ Replacement of engine in automobile.
_____ Special floor foundations for installation of new equipment.
_____ Tires purchased for truck.
_____ Transportation expenditures to bring newly purchased equipment to plant.

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**EXERCISE 8–2 (LO1)**

Glasgo Holdings Inc. purchased a property including land and a building for $300,000. The market values of the land and building were $100,000 and $300,000, respectively.

**Required**: Using these market values, prepare a journal entry to record the lump sum purchase.

---

**EXERCISE 8–3 (LO1,2)**

Ekman Corporation purchased a new laser printer to be used in its business. The printer had a list price of $4,000, but Ekman was able to purchase it for $3,575. The company expects it to have a useful life of five years, with an estimated residual value of $250. Ekman is paying the delivery costs of $100 along with the set-up and debugging costs of $350.

**Required**:

**a.** Calculate the total cost of the laser printer.

**b.** Ekman management asks you whether the straight-line or double-declining balance method of depreciation would be most appropriate for the printer. Provide calculations to support your answer.

---

**EXERCISE 8–4 (LO2)** Watch video

Willow Inc. began a business on January 1, 2023. It purchased equipment for its factory on this date for $240,000. The equipment is expected to have an estimated useful life of five years with a residual value of $40,000. Willow's year-end is December 31.

**Required**: Compute the depreciation for 2023, 2024, 2025, 2026 and 2027 using

**a.** The straight-line method

**b.** The double-declining balance method.

---

**EXERCISE 8–5 (LO2)**

Mayr Inc. began a business on January 1, 2023. It purchased a machine for its factory on this date for $110,000. The machine is expected to have an estimated useful life of four years with a residual value of $40,000.

**Required**: Compute the depreciation for 2023, 2024, 2025, and 2026 using

**a.** The straight-line method

**b.** The double-declining balance method.

---

**EXERCISE 8–6 (LO2,3)** Watch video

Penny Corp. purchased a new car on March 1, 2023 for $25,000. The estimated useful life of the car was five years or 500,000 kms. Estimated residual value was $5,000. The car was driven 120,000 kms. in 2023 and 150,000 kms. in 2024. Penny Corp.'s year end is December 31.

**Required**:

**a.** Applying the half-year rule, calculate depreciation for 2023 and 2024 using

i. The straight-line method

ii. Units-of-production method

iii. Double-declining-balance method

**b.** Assuming Penny Corp. calculates depreciation to the nearest whole month, determine depreciation for 2023 and 2024 using

i. The straight-line method

ii. Units-of-production method

iii. Double-declining-balance method

---

**EXERCISE 8–7 (LO4)**

Global Flow Inc. purchased machinery on January 1, 2023 for $60,000 cash. It had an estimated useful life of three years, with no residual value, and depreciation is calculated using the straight-line method. During 2025, Global Flow determined that the estimated useful life should be revised to a total of five years and the residual value changed to $10,000.

**Required**: Prepare the entry to record revised depreciation for the year ended December 31, 2025.

---

**EXERCISE 8–8 (LO4)**

Denton Inc. purchased machinery on January 1, 2023 for $140,000 cash. It had an estimated useful life of five years and no residual value. On January 1, 2024, Denton purchased a specialized component for $50,000 that was attached to the machinery to significantly increase its productivity. The estimated useful life of the component was four years with no residual value. The life and residual value of the original machinery was not affected by the new component.

**Required**:

**a.** Prepare the entry to record depreciation for the year ended December 31, 2023.

**b.** Prepare the entry to record revised depreciation for the year ended December 31, 2024.

---

**EXERCISE 8–9 (LO5)** Watch video

As part of its December 31, 2023 year end procedures, Beltore Inc. is evaluating its assets for impairment. It has recorded no impairment losses for previous years. Following is the Property, Plant and Equipment schedule showing adjusted balances as at December 31, 2023:

| *Asset* | *Date of Purchase* | *Depreciation Method* | *Cost* | *Estimated Residual* | *Estimated Useful life* | *Accumulated Depreciation* | *Recoverable Amount* |
|---|---|---|---|---|---|---|---|
| Land | Sept. 1/2022 | N/A | $100,000 | N/A | N/A | N/A | $115,000 |
| Building | Dec. 1/2022 | SL | 890,000 | $250,000 | 20 | $34,667 | 870,000 |
| Machinery | Dec. 1/2022 | SL | 400,000 | 150,000 | 10 | 27,083 | 350,000 |

*DDB = Double-declining-balance; SL = Straight-line; U = Units-of-production; N/A = Not applicable*

**Required**:

**a.** Record any impairment losses at December 31, 2023.

**b.** Record depreciation expense for the year ended December 31, 2024 assuming no changes in the estimated residual values or estimated useful lives of the assets.

---

**EXERCISE 8–10 (LO6)**

Freeman Inc. purchased a piece of agricultural land several years ago for $125,000. The land has a fair value of $200,000 now. The company plans to exchange this land for equipment owned by a land developer that has a fair value of $240,000. The equipment was originally purchased for $325,000, and $80,000 of depreciation has been recorded to the date of the exchange.

**Required**:

**a.** Prepare the journal entry on the books of

i. Freeman

ii. the developer.

**b.** Why would the developer give up an asset with a fair value of $240,000 in exchange for an asset with a fair value of only $200,000?

---

**EXERCISE 8–11 (LO6)**

Mayr Inc. showed the following selected adjusted trial balance information at June 30, 2023:

| | *Debits* | *Credits* |
|---|---|---|
| Equipment | $60,000 | |
| Accumulated Depreciation – Equipment | | $40,000 |

**Required**: Mayr Inc. is planning on selling the equipment. Using the information provided above, prepare the journal entry to record the sale assuming

**a.** The equipment was sold for $20,000.

**b.** The equipment was sold for $30,000.

**c.** The equipment was sold for $5,000.

---

**EXERCISE 8–12 (LO7)**

On March 1, 2023, Willis Publishing purchased the copyright from the author of a new book for cash of $50,000. It is expected that the book will have a shelf life of about 5 years with no expected residual value. On October 1, 2025, Willis sold the copyright to a movie producer for $100,000. Willis Publishing uses the straight-line method to amortize copyrights.

**Required**: Prepare Willis Publishing's journal entries at

**a.** March 1, 2023 to record the purchase of the copyright.

**b.** December 31, 2023, Willis's year-end, to record amortization of the copyright.

**c.** October 1, 2025.

## Problems

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**PROBLEM 8–1 (LO1)**

Arrow Construction Company Ltd. purchased a farm from K. Jones. Arrow and Jones completed the transaction under the following terms: a cheque from Arrow to Jones for $140,000; bank loan assumed by Arrow, $100,000. Legal, accounting, and brokerage fees amounted to $20,000.

It was Arrow's intention to build homes on the property after sub-dividing. Crops on the farm were sold for $6,000; a house, to be moved by the buyer, was sold for $1,600; barns were razed at a cost of $6,000, while salvaged lumber was sold for $4,400. The property was cleared and levelled at a cost of $10,000.

The necessary property was turned over to the township for roads, schools, churches, and playgrounds. Riverside still expected to secure a total of 500 identical lots from the remaining land.

**Required**: Prepare a schedule showing the cost to Arrow of the 500 lots.

---

**PROBLEM 8–2 (LO2)**

On January 1, 2021, Beyond Adventures Ltd. purchased a safari jeep for use in their wilderness weekends. The following information is available.

| | |
|---|---|
| Cost | $30,000 |
| Estimated useful life | 6 years or 80,000 kms |
| Residual value | $8,000 |
| Mileage in 2021 | 15,000 kms |

**Required**:

1. Assuming that the company depreciates on the basis of 50% each in the years of acquisition and disposal, calculate the depreciation for 2022 under each of the methods below. Round your final answer to nearest whole dollar.

   (a) Usage based (Units of Production)

   (b) Straight-line

(c) Double-declining balance – round percentage to two decimal places.

2. Compare the carrying amount for 2021 under each of these methods.
3. Which of the three methods results in the lowest net income for 2021?
4. Which of the three methods results in the lowest net income for 2022 if 25,000 kms were driven?

---

**PROBLEM 8–3 (LO2,6)**

Janz Corporation purchased a piece of machinery on January 1, 2023. The company's year-end is December 31. The following information is available regarding the machinery:

| *Cost* | *Estimated Useful Life* | *Estimated Residual Value* | *Depreciation Method* |
|---|---|---|---|
| $95,000 | 9,000 units | $5,000 | Units-of-Production |

Assume actual output was:

| *Year* | *Actual Units Produced* |
|---|---|
| 2023 | 2,000 |
| 2024 | 3,000 |
| 2025 | 2,800 |
| 2026 | 2,900 |

The machinery was sold on January 15, 2027 for $12,000.

**Required**:

1. Calculate the depreciation expense for each of 2023 through to 2026 inclusive.
2. What is the balance of accumulated depreciation at the end of 2026?
3. What is the carrying amount of the machinery shown on the balance sheet at the end of 2026?
4. Prepare the entry on January 15, 2027 to record the sale of the machinery.

**PROBLEM 8–4 (LO1,2,4)**

The following are details about an equipment purchase on January 1, 2021:

| | |
|---|---|
| Purchase price | $35,000 |
| Transportation charges | 1.200 |
| Installation costs | 5,700 |
| Minor repair cost | 100 |
| Useful life | four years |
| Residual value | $8,000 |

**Required**:

1. Calculate the total cost of the equipment asset.
2. Record the depreciation for each year of the expected useful life of the machine under straight-line method and double-declining balance method. Year-end is Dec 31.
3. Assume now that on January 1, 2024, management changed the estimated useful life on the machine to a total of five years from the date of purchase. Residual value was also changed to $2,000. Calculate the depreciation that should be recorded in 2024 and each year thereafter assuming the company used the straight-line method.

Round all final answers to the nearest whole dollar.

**PROBLEM 8–5 (LO4,6)**

On January 1, 2015, Inceptor Ltd. purchased equipment for $115,000. The estimated useful life was thirty years. The residual value was estimated to be 15 per cent of the original cost. On January 1, 2022, experts were hired to review the expected useful life and residual value of the machine. They determined that the estimated useful life remaining was fifteen years and the new residual value was $18,000.

Depreciation has not yet been recorded in 2022. The company uses straight-line method of depreciation and the policy is to depreciate 50% each in the years of acquisition and disposal.

**Required**:

1. Calculate the carrying amount of the machine at December 31, 2021.
2. Calculate and record the depreciation expense at December 31, 2022.
3. Record the journal entries if the machine is sold on July 31, 2023 for $80,000.

---

**PROBLEM 8–6 (LO4,6)**

On August 1, 2022 Mayfere Co. commenced business and purchased production equipment for $250,000 cash. The equipment had an estimated useful life of eight years, an estimated total production output of 200,000 units, and a residual value of $40,000. The equipment was depreciated using the units-of-production method. Actual units of output over three years were: 2022: 11,000; 2023: 25,000; and 2024: 35,000.

On January 1, 2021, the company traded in the original equipment for new production equipment. The company paid and additional $30,000 cash for the new equipment. The fair value of the original equipment was $140,000 at the date of the trade.

**Required**: Prepare journal entries to record the transactions for:

1. The equipment purchase
2. Depreciation for 2022, 2023 and 2024
3. The sale of the equipment

---

**PROBLEM 8–7 (LO7,8,9)**

Teldor Ltd. paid $1M cash to purchase the following tangible and intangible assets of Zak Company on January 1, 2022. The fair values of the assets purchased were:

| | |
|---|---|
| Land | $150,000 |
| Building | 400,000 |
| Patents | 200,000 |
| Machinery | 150,000 |

The patents have an estimated useful life of twenty years and are amortized on a straight-line basis. They have no residual value. On January 3, 2024, the value of the patents was estimated to be $165,000.

**Required**: Record the entries for the following transactions for Teldor:

1. The $900,000 purchase.
2. The decline in value of the patents at January 3, 2024.
3. The amortization of the patents at December 31, 2024.
4. Prepare a partial balance sheet for the intangible assets section at December 31, 2024 in good form, with proper disclosures.

---

**PROBLEM 8–8 (LO1,2)**

Global Flow Inc. purchased a computer on January 1, 2022 for $3,000 cash. It had an estimated useful life of three years and no residual value. Global Flow made the following changes to the computer:

| | |
|---|---|
| Mar 1, 2022 | Added storage capacity at a cost of $1,000. This had no effect on residual value or estimated useful life. |
| Apr 1, 2023 | Added a new processing board for $2,000, which extended the estimated useful life of the computer another three years but did not affect residual value. |

**Required**:

1. Prepare a journal entry to record each of the above expenditures. Assume all amounts are material. Descriptions are not necessary.
2. Calculate and prepare journal entries to record depreciation expense for 2022 and 2023 using the double-declining balance method. Assume a December 31 fiscal year-end and that the company depreciates 50% each in the acquisition and disposal years.

# Chapter 9

# Debt Financing: Current and Long-term Liabilities

A corporation often has liabilities. These liabilities must be classified on the balance sheet as current or long-term. Current liabilities can include known liabilities such as payroll liabilities, interest payable, and other accrued liabilities. Short-term notes payable and estimated liabilities, including warranties and income taxes, are also classified as current. Long-term debt is used to finance operations and may include a bond issue or long-term bank loan.

## Chapter 9 Learning Objectives

LO1 – Identify and explain current versus long-term liabilities.

LO2 – Record and disclose known current liabilities.

LO3 – Record and disclose estimated current liabilities.

LO4 – Identify, describe, and record bonds.

LO5 – Explain, calculate, and record long-term loans.

## Concept Self-Check

Use the following as a self-check while working through Chapter 9.

1. What is the difference between a current and long-term liability?
2. What are some examples of known current liabilities?
3. How are known current liabilities different from estimated current liabilities?
4. What are some examples of estimated current liabilities?
5. How is an estimated current liability different from a contingent liability?
6. What are bonds, and what rights are attached to bond certificates?
7. What are some characteristics of bonds?

8. When a bond is issued at a premium, is the market interest rate higher or lower than the contract interest rate on the bond?
9. When a bond is issued at a discount, is the market interest rate higher or lower than the contract interest rate on the bond?
10. How are bonds and related premiums or discounts recorded in the accounting records and disclosed on the balance sheet?
11. How is a loan payable similar to a bond issue? How is it different?
12. How are payments on a loan recorded, and how is a loan payable presented on the balance sheet?

**NOTE:** The purpose of these questions is to prepare you for the concepts introduced in the chapter. Your goal should be to answer each of these questions as you read through the chapter. If, when you complete the chapter, you are unable to answer one or more the Concept Self-Check questions, go back through the content to find the answer(s). Solutions are not provided to these questions.

## 9.1 Current versus Long-term Liabilities

LO1 – Identify and explain current versus long-term liabilities.

**Current** or **short-term liabilities** are a form of debt that is expected to be paid within the longer of one year of the balance sheet date or one operating cycle. Examples include accounts payable, wages or salaries payable, unearned revenues, short-term notes payable, and the current portion of long-term debt.

**Long-term liabilities** are forms of debt expected to be paid beyond one year of the balance sheet date or the next operating cycle, whichever is longer. Mortgages, long-term bank loans, and bonds payable are examples of long-term liabilities.

Current and long-term liabilities must be shown separately on the balance sheet. For example, assume the following adjusted trial balance at December 31, 2023 for Waterton Inc.:

Waterton Inc.
Adjusted Trial Balance
December 31, 2023

| *Account* | *Debits* | *Credits* |
|---|---|---|
| Cash | $ 80,000 | |
| Accounts receivable | 140,000 | |
| Equipment | 570,000 | |
| Accumulated depreciation – equipment | | $ 40,000 |
| Accounts payable | | 39,000 |
| Unearned revenue | | 15,000 |
| Wages payable | | 7,000 |
| Notes payable, due November 30, 2024 | | 20,000 |
| Notes payable, due March 31, 2026 | | 75,000 |
| Mortgage payable (Note 1) | | 115,797 |
| Share capital | | 300,000 |
| Retained earnings | | 178,203 |
| | $790,000 | $790,000 |

Note 1: A 4-year, 6%, $150,000 mortgage was dated January 1, 2023. Waterton makes monthly payments of $3,523. The principal balances at the end of each year are:

| | | |
|---|---|---|
| December 31, 2023 | – $ | 115,797 |
| December 31, 2024 | – $ | 79,484 |
| December 31, 2025 | – $ | 40,931 |
| December 31, 2026 | – $ | -0- |

Based on this information, the liabilities section of the December 31, 2023 balance sheet would appear as follows:

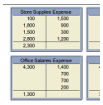
Waterton Inc.
Liabilities Section of the Balance Sheet
December 31, 2023

| | | |
|---|---|---|
| Liabilities | | |
| Current liabilities | | |
| Accounts payable | $39,000 | |
| Unearned revenues | 15,000 | |
| Wages payable | 7,000 | |
| Notes payable, due November 30, 2024 | 20,000 | |
| Current portion of mortgage payable | 36,313 | |
| Total current liabilities | | $117,313 |
| Long-term liabilities | | |
| Notes payable, due March 31, 2026 | $75,000 | |
| Mortgage payable (less current portion) | 79,484 | |
| Total long-term liabilities | | 154,484 |
| Total liabilities | | $271,797 |

Notice the sum of the current and long-term portion of the mortgage equals the unadjusted balance of $115,797 on the Adjusted Trial Balance. This must always be the case.

The $20,000 notes payable, due November 30, 2024 is a current liability because its maturity date is within one year of the balance sheet date, a characteristic of a current liability. The $75,000 notes payable, due March 31, 2023 is a long-term liability since it is to be repaid beyond one year of the balance sheet date.

It is important to classify liabilities correctly otherwise decision makers may make incorrect conclusions regarding, for example, the organization's liquidity position.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Current and Long-Term Liabilities.

## 9.2 Known Current Liabilities

LO2 – Record and disclose known current liabilities.

**Known current liabilities** are those where the payee, amount, and timing of payment are known. Examples include accounts payable, unearned revenues, and payroll liabilities. These are different from **estimated current liabilities** where the amount is not known and must be estimated. Estimated current liabilities are discussed later in this chapter.

### Payroll Liabilities

Accounts payable and unearned revenues were introduced and discussed in previous chapters. Payroll liabilities are amounts owing to employees. Employee income taxes, Canada Pension Plan (CPP, or Quebec Pension Plan in Quebec), Employment Insurance (EI), union dues, health insurance, and other amounts are deducted by the employer from an employee's salary or wages. These withheld amounts are remitted by the employer to the appropriate agencies. An employee's gross earnings, less the deductions withheld by the employer, equals the net pay. To demonstrate the journal entries to record a business's payroll liabilities for its two employees, assume the following payroll record:

| | Deductions | | | | | Payment | Distribution | |
|---|---|---|---|---|---|---|---|---|
| EI | Income Taxes | Health Ins. | CPP | Union Dues | Total Deductions | Net Pay | Sales Salaries Expense | Office Salaries Expense |
| 25.84 | 285.00 | 55.00 | 62.16 | 105.00 | 533.00 | 1,027.00 | 1,560.00 | |
| 16.50 | 114.00 | 55.00 | 51.50 | 75.00 | 312.00 | 663.00 | | 975.00 |
| 42.34 | 399.00 | 110.00 | 113.66 | 180.00 | 845.00 | 1,690.00 | 1,560.00 | 975.00 |

The employer's journal entries would be:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Sales Salaries Expense | | 1,560.00 | |
| | Office Salaries Expense | | 975.00 | |
| | EI Payable | | | 42.34 |
| | Employee Income Taxes Payable | | | 399.00 |
| | Employee Health Insurance Payable | | | 110.00 |
| | CPP Payable | | | 113.66 |
| | Employee Union Dues Payable | | | 180.00 |
| | Salaries Payable | | | 1,690.00 |
| | To record payroll. | | | |

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | EI Expense | | 59.28 | |
| | CPP Expense | | 113.66 | |
| | EI Payable | | | 59.28 |
| | CPP Payable | | | 113.66 |
| | To record the employer's portions of EI and CPP calculated as 1.4 times (42.34 x 1.4) and 1 times (113.66 x 1) the employees' portion. | | | |

For EI and CPP, both the employee and employer are responsible for making payments to the government. At the time of writing, the employer's portion of EI was calculated as 1.4 times the employee's EI amount. For CPP, the employer is required to pay the same amount as the employee. EI, CPP, and federal/provincial income tax amounts payable are based on rates applied to an employee's gross earnings. The rates are subject to change each tax year. The actual rates for EI, CPP, and federal/provincial income tax can be viewed online at Canada Revenue Agency's website: https://www.canada.ca/en/revenue-agency.html.

## Sales Taxes

Sales taxes are also classified as known current liabilities. There are two types of sales taxes in Canada: federal *Goods and Services Tax (GST)* and *Provincial Sales Tax (PST)*. The **Goods and Services Tax (GST)** is calculated as 5% of the selling price of *taxable supplies*. For example, if a business is purchasing supplies with a selling price of $1,000, the GST is $50 (calculated as $1,000 x 5%). **Taxable supplies** are the goods or services on which GST applies. GST is not applied to **zero-rated supplies** (prescription drugs, groceries, and medical supplies) or **exempt supplies** (services such as education, health care, and financial). Sellers of taxable supplies are **registrants**, businesses registered with Canada Revenue Agency that sell taxable supplies and collect GST on behalf of the *Receiver General for Canada*. The **Receiver General for Canada** is the federal government body to which all taxes, including federal income tax, are remitted. Registrants also pay GST on the purchase of taxable supplies recording an **input tax credit** for the GST paid. Total input tax credits, or GST receivable, less GST payable is the amount to be remitted/refunded.

**Provincial Sales Tax (PST)** is the provincial sales tax paid by the *final* consumers of products. The PST rate is determined provincially. PST is calculated as a percentage of the selling price. Quebec's equivalent to PST is called the **Quebec Sales Tax (QST)**.

The **Harmonized Sales Tax (HST)** is a combination of GST and PST that is used in some Canadian jurisdictions. Figure 9.1 summarizes sales taxes across Canada.

| | GST | PST | QST | HST |
|---|---|---|---|---|
| Alberta | 5% | - | - | - |
| British Columbia | 5% | 7% | - | - |
| Manitoba | 5% | 7% | - | - |
| Northwest Territories | 5% | - | - | - |
| Nunavut | 5% | - | - | - |
| Saskatchewan | 5% | 6% | - | - |
| Yukon | 5% | - | - | - |
| Quebec | 5% | - | 9.975% | - |
| Newfoundland and Labrador | - | - | - | 15% |
| New Brunswick | - | - | - | 15% |
| Nova Scotia | - | - | - | 15% |
| Ontario | - | - | - | 13% |
| Prince Edward Island | - | - | - | 15% |

**Figure 9.1: Sales Taxes in Canada**[1]

To demonstrate how sales taxes are recorded, let us review an example. Assume Perry Sales, out of Saskatchewan, purchased $2,400 of merchandise inventory on account from a supplier, Carmen Inc., also in Saskatchewan. Perry Sales then sold this merchandise inventory to a customer for cash of $3,600. Perry Sales' entries for the purchase, subsequent sale of merchandise, and remittance of sales taxes are:

[1]These were the sales tax rates in effect at the time of writing, July 2022.

GST receivable is debited. Because Perry Sales is a merchandiser and therefore not the final consumer, there is no PST.

| | | |
|---|---|---|
| Merchandise Inventory | 2,400.00 | |
| GST Receivable | 120.00 | |
| Accounts Payable – Carmen Inc. | | 2,520.00 |
| *To record purchase of merchandise inventory on account.* | | |

The previous $120 debit to GST receivable plus the $180 credit to GST payable in this entry result in a balance owing to the government of $60.

| | | |
|---|---|---|
| Cash | 3,960.00 | |
| Sales | | 3,600.00 |
| PST Payable | | 180.00 |
| GST Payable | | 180.00 |
| *To record cash sale.* | | |
| | | |
| Cost of Goods Sold | 2,400.00 | |
| Merchandise Inventory | | 2,400.00 |
| *To record the cost of the sale.* | | |

PST and GST are remitted to the appropriate government authority.

| | | |
|---|---|---|
| PST Payable | 180.00 | |
| GST Payable | 180.00 | |
| GST Receivable | | 120.00 |
| Cash | | 240.00 |
| *To record remittance of sales taxes.* | | |

## Short-term Notes Payable

Short-term notes receivable were discussed in Chapter 7. A short-term note payable is identical to a note receivable except that it is a current liability instead of an asset. In Chapter 7, BDCC's customer Bendix Inc. was unable to pay its $5,000 account within the normal 30-day period. The receivable was converted to a 5%, 60-day note receivable dated December 5, 2023. The following example contrasts the entries recorded by BDCC for the note receivable to the entries recorded by Bendix Inc. for its note payable.

Entries in BDCC's records for the note receivable:

| | | |
|---|---|---|
| Notes Receivable – Bendix | 5,000 | |
| Accounts Receivable – Bendix | | 5,000 |

*To record the conversion of a customer's account to a 5%, 60-day note dated December 5, 2023.*

| | | |
|---|---|---|
| Interest Receivable | 17.81 | |
| Interest Revenue | | 17.81 |

*To record the adjusting entry on December 31 to accrue interest from December 5 to December 31.*

| | | |
|---|---|---|
| Cash | 5,041.10 | |
| Note Receivable – Bendix | | 5,000.00 |
| Interest Receivable | | 17.81 |
| Interest Revenue | | 23.29 |

*To record the collection of the principal and interest at maturity on February 3, 2024.*

Entries in Bendix Inc.'s records for the note payable:

| | | |
|---|---|---|
| Accounts Payable – BDCC | 5,000 | |
| Notes Payable – BDCC | | 5,000 |

*To record the conversion of a supplier's account to a 5%, 60-day note dated December 5, 2023.*

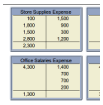
| | | |
|---|---|---|
| Interest Expense | 17.81 | |
| Interest Payable | | 17.81 |

*To record the adjusting entry on December 31 to accrue interest from December 5 to December 31.*

| | | |
|---|---|---|
| Notes Payable – BDCC | 5,000.00 | |
| Interest Expense | 23.29 | |
| Interest Payable | 17.81 | |
| Cash | | 5,041.10 |

*To record the payment of the principal and interest at maturity on February 3, 2024.*

Notice that the dollar amounts in the entries for BDCC are identical to those for Bendix. The difference is that BDCC is recognizing a receivable from Bendix while Bendix is recognizing a payable to BDCC.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Known (Determinable) Liabilities.

## 9.3 Estimated Current Liabilities

LO3 – Record and disclose estimated current liabilities.

An **estimated liability** is known to exist where the amount, although uncertain, can be estimated. Two common examples of estimated liabilities are warranties and income taxes.

### Warranty Liabilities

A **warranty** is an obligation incurred by the seller of a product or service to replace or repair defects. Warranties typically apply for a limited period of time. For example, appliances are often sold with a warranty for a specific time period. The seller does not know which product/service will require warranty work, when it might occur, or the amount. To match the warranty expense

to the period in which the revenue was realized, the following entry that estimates the amount of warranty expense and related liability must be recorded:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Warranty Expense . . . . . | | XXX | |
| | Estimated Warranty Liability . . . . . | | | XXX |
| | To record estimated warranty expense and related liability. | | | |

When the warranty work is actually performed, assuming both parts and labour, the following is recorded:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Estimated Warranty Liability . . . . . | | XXX | |
| | Parts Inventory . . . . . | | | XXX |
| | Wages Payable . . . . . | | | XXX |
| | To record the actual costs of parts and labour for warranty work. | | | |

An exploration is available on the Lyryx site. Log into your Lyryx course to run Estimated Liabilities.

## Income Tax Liabilities

A corporation is taxed on the taxable income it earns. As for any entity, corporations must file a tax return annually. However, the government typically requires the corporation to make advance monthly payments based on an estimated amount. When the total actual amount of income tax is known at the end of the accounting period, the corporation will record an adjustment to reconcile any difference between the total actual tax and the total monthly tax accrued in the accounting records. For example, assume it is estimated that the total income tax for the year ended December 31, 2023 will be $300,000. This translates into $25,000 of income tax to be accrued at the end of each month ($300,000 ÷ 12 months = $25,000/month). Assume further that the government requires payments to be made by the 15th of the following month. The entries at the end of each month from January through to November would be:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Income Tax Expense . . . . . | | 25,000 | |
| | Income Tax Payable . . . . . | | | 25,000 |
| | To record estimated income tax expense. | | | |

On the 15th of each month beginning February 15th to December 15th, the following entry would be recorded:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Income Tax Payable . . . . . | | 25,000 | |
| | Cash . . . . . | | | 25,000 |
| | To record payment of income tax. | | | |

Assume that at the end of December, the corporation's actual income tax was determined to be $297,000 instead of the originally estimated $300,000. The entry at December 31 would be:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Dec 31 | Income Tax Expense . . . . . | | 22,000 | |
| | Income Tax Payable . . . . . | | | 22,000 |
| | To report income tax expense; ($25,000 x 11 months = $275,000; $297,000 - $275,000 = $22,000). | | | |

## Contingent Liabilities

Recall that an estimated liability is recorded when the liability is probable and the amount can be reliably estimated. A **contingent liability** exists when one of the following two criteria are satisfied:

1. it is not probable or
2. it cannot be reliably estimated.

A liability that is determined to be contingent is not recorded, rather it is disclosed in the notes to the financial statements except when there is a remote likelihood of its existence. An example of a contingent liability is a lawsuit where it is probable there will be a loss but the amount cannot be reliably determined. A brief description of the lawsuit must be disclosed in the notes to the financial statements; it would not be recorded until the amount of the loss could be reliably estimated. Great care must be taken with contingencies — if an organization intentionally withholds information, it could cause decision makers, such as investors, to make decisions they would not otherwise have made.

Contingent assets, on the other hand, are not recorded until actually realized. If a contingent asset is probable, it is disclosed in the notes to the financial statements.

## 9.4 Long-Term Liabilities—Bonds Payable

LO4 – Identify, describe, and record bonds.

Corporations generally acquire long-lived assets like property, plant, and equipment through the issue of shares or long-term debt that is repayable over many years. Chapter 10 addresses the ways in which a corporation can raise funds by issuing shares, known as equity financing. This chapter discusses corporate financing by means of issuing long-term debt, known as debt financing. Types of long-term debt are typically classified according to their means of repayment.

1. **Bonds** pay *only interest* at regular intervals to investors. The original investment is repaid to bondholders when the bond *matures* (or comes due), usually after a number of years. Bonds are generally issued to many individual investors.
2. **Loans** are repaid in equal payments on a regular basis. The payments represent both *interest and principal* paid to creditors. Such payments are said to be *blended*. That is, each payment contains repayment of a certain amount of the original amount of the loan (the principal), as well as interest on the remaining principal balance.

Bonds are discussed in this section. Loans are expanded upon in the next section. Other types of debt, such as leases, are left for study in a more advanced accounting textbook.

### Rights of Bondholders

As noted above, a **bond** is a debt instrument, generally issued to many investors, that requires future repayment of the original amount at a fixed date, as well as periodic interest payments during the intervening period. A contract called a **bond indenture** is prepared between the corporation and the future bondholders. It specifies the terms with which the corporation will comply, such as how much interest will be paid and when. Another of these terms may be a restriction on further borrowing by the corporation in the future. A **trustee** is appointed to be an intermediary between the corporation and the bondholder. The trustee administers the terms of the indenture.

Ownership of a bond certificate carries with it certain rights. These rights are printed on the actual certificate and vary among bond issues. The various characteristics applicable to bond issues are the subject of more advanced courses in finance and are not covered here. However, individual bondholders always acquire two rights.

1. The right to receive the face value of the bond at a specified date in the future, called the *maturity date*.

2. The right to receive periodic interest payments at a specified percent of the bond's face value.

## Bond Authorization

Every corporation is legally required to follow a well-defined sequence in authorizing a bond issue. The bond issue is presented to the board of directors by management and must be approved by shareholders. Legal requirements must be followed and disclosure in the financial statements of the corporation is required.

Shareholder approval is an important step because bondholders are creditors with a prior claim on the corporation's assets if liquidation occurs. Further, dividend distributions may be restricted during the life of the bonds, and those shareholders affected usually need to approve this. These restrictions are typically reported to the reader of financial statements through note disclosure.

Assume that Big Dog Carworks Corp. decides to issue $30 million of 12% bonds to finance its expansion. The bonds are repayable three years from the date of issue, January 1, 2023. The amount of authorized bonds, their interest rate, and their maturity date can be shown in the accounts as follows:

GENERAL LEDGER
Bonds Payable –
Long-Term
Due Jan. 1, 2023

Acct. No. 272

| Date | | Description | Debit | Credit | DR/CR | Balance |
|---|---|---|---|---|---|---|
| 2023 | | | | | | |
| | | | | | | |
| Jan. | 1 | Authorized to issue $30,000,000 | | | | |
| | | of 12%, 3-year bonds, due | | | | |
| | | January 1, 2023. | | | | |

## Bonds in the Financial Statement

Each bond issue is disclosed separately in the notes to the financial statements because each issue may have different characteristics. The descriptive information disclosed to readers of financial statements includes the interest rate and maturity date of the bond issue. Also disclosed in a note are any restrictions imposed on the corporation's activities by the terms of the bond indenture and the assets pledged, if any.

## Other Issues Related to Bond Financing

There are several additional considerations related to the issue of bonds.

1. **Cash Required in the Immediate and the Foreseeable Future**

   Most bond issues are sold in their entirety when market conditions are favourable. However, more bonds can be authorized in a particular bond issue than will be immediately sold. Authorized bonds can be issued whenever cash is required.

2. **Time Periods Associated with Bonds**

   The interest rate of bonds is associated with time, their maturity date is based on time, and other provisions — such as convertibility into share capital and restrictions on future dividend distributions of the corporation — are typically activated at a given point in time. These must also be considered, as the success of a bond issue often depends on the proper combination of these and other similar features.

3. **Assets of the Corporation to Be Pledged**

   Whether or not long-lived assets like property, plant, and equipment are pledged as security is an important consideration for bondholders because doing so helps to safeguard their investments. This decision is also important to the corporation because pledging all these assets may restrict future borrowings. The total amount of authorized bonds is usually a fraction of the pledged assets, such as 50%. The difference represents a margin of safety to bondholders. The value of these assets can shrink substantially but still permit reimbursement of bondholders should the company be unable to pay the bond interest or principal, and need to sell the pledged assets.

## Bond Characteristics

Each corporation issuing bonds has unique financing needs and attempts to satisfy various borrowing situations and investor preferences. Many types of bonds have been created to meet these varying needs.

**Secured bonds** are backed by physical assets of the corporation. These are usually long-lived assets. When real property is legally pledged as security for the bonds, they are called **mortgage bonds**.

Unsecured bonds are commonly referred to as **debentures**. A debenture is a formal document stating that a company is liable to pay a specified amount with interest. The debt is not backed by any collateral. As such, debentures are usually only issued by large, well-established companies. Debenture holders are ordinary creditors of the corporation. These bonds usually command a higher interest rate because of the added risk for investors.

**Registered bonds** require the name and address of the owner to be recorded by the corporation or its trustee. The title to **bearer bonds** passes on delivery of the bonds to new owners and is not tracked. Payment of interest is made when the bearer clips coupons attached to the bond and presents these for payment. Bearer bonds are becoming increasingly rare.

When **serial bonds** are issued, the bonds have differing maturity dates, as indicated on the bond contract. Investors are able to choose bonds with a term that agrees with their investment plans. For example, in a $30 million serial bond issue, $10 million worth of the bonds may mature each year for three years.

The issue of bonds with a **call provision** permits the issuing corporation to redeem, or call, the bonds before their maturity date. The bond indenture usually indicates the price at which bonds are callable. Corporate bond issuers are thereby protected in the event that market interest rates decline below the bond contract interest rate. The higher interest rate bonds can be called to be replaced by bonds bearing a lower interest rate.

Some bonds allow the bondholder to exchange bonds for a specified type and amount of the corporation's share capital. Bonds with this feature are called **convertible bonds**. This feature permits bondholders to enjoy the security of being creditors while having the option to become shareholders if the corporation is successful.

When **sinking fund bonds** are issued, the corporation is required to deposit funds at regular intervals with a trustee. This feature ensures the availability of adequate cash for the redemption of the bonds at maturity. The fund is called "sinking" because the transferred assets are tied up or "sunk," and cannot be used for any purpose other than the redemption of the bonds.

The corporation issuing bonds may be required to restrict its retained earnings. The **restriction of dividends** means that dividends declared cannot exceed a specified balance in retained earnings. This protects bondholders by limiting the amount of dividends that can be paid.

Investors consider the interest rates of bonds as well as the quality of the assets, if any, that are pledged as security. The other provisions in a bond contract are of limited or no value if the issuing corporation is in financial difficulties. A corporation in such difficulties may not be able to sell its bonds, regardless of the attractive provisions attached to them.

## Recording the Issuance of Bonds at Face Value (at Par)

Each bond has an amount printed on the face of the bond certificate. This is called the **face value** of the bond; it is also referred to as the **par-value** of the bond. When the cash received is the same as a bond's face value, the bond is said to be issued at *par*. A common face value of bonds is $1,000, although bonds of other denominations exist. A $30 million bond issue can be divided into 30,000 bonds, for example. This permits a large number of individuals and institutions to participate in corporate financing.

If a bond is sold at face value, the journal entry is:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Cash | | 1,000 | |
| | Bonds Payable | | | 1,000 |
| | To record the issue of 8% bonds at par. | | | |

## Recording the Issuance of Bonds at a Premium

A $1,000 bond is sold at a **premium** when it is sold for more than its face value. This results when the bond interest rate is higher than the market interest rate. For instance, assume Big Dog Carworks Corp. issues a bond on January 1, 2023 with a face value of $1,000, a maturity date of one year, and a stated or contract interest rate of 8% per year, at a time when the market interest rate is 7%. Potential investors will bid up the bond price to $1,009.34 based on present value calculations where FV = $1,000; PMT = $80; i = 7 (the market rate); and n = 1.[2] We will round the $1,009.34 to $1,009 to simplify the demonstration.

The premium is the $9 difference between the $1,009 selling price of the bond and the $1,000 face value. The journal entry to record the sale of the bond on January 1, 2023 is:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jan 1 | Cash | | 1,009 | |
| | Bonds Payable | | | 1,000 |
| | Premium on Bonds Payable | | | 9 |
| | To record the issue of 8% bonds at a premium. | | | |

The Premium on Bonds Payable account is a contra liability account that is added to the value of the bonds on the balance sheet. Because the bonds mature in one year, the bond appears in the current liabilities section of the balance sheet as follows:

| | | |
|---|---|---|
| *Liabilities* | | |
| *Current* | | |
| Bonds payable | $1,000 | |
| Add: Premium on bonds payable | 9 | $1,009 |

On the maturity date of December 31, 2023, the interest expense of $80 is paid, bondholders are repaid, and the premium is written off as a reduction of interest expense.

[2] Present Value (PV) calculations can be done using tables or a business calculator. Table values are rounded causing results to be less accurate. Since business calculators have PV functionality, all PV calculations should be done using a calculator. PV calculations are reviewed in Section 9.6. Given the variety of calculators on the market, students should take responsibility for knowing how to do PV calculations using their own calculator.

These three journal entries would be made:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Dec 31 | Interest Expense . . . . . | | 80 | |
| | Cash . . . . . | | | 80 |
| | To record interest paid on bonds. | | | |

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Dec 31 | Bonds Payable . . . . . | | 1,000 | |
| | Cash . . . . . | | | 1,000 |
| | To record payment of bonds. | | | |

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Dec 31 | Premium on Bonds Payable . . . . . | | 9 | |
| | Interest Expense . . . . . | | | 9 |
| | To record write-off of premium against interest. | | | |

Alternatively, a single entry would be preferable as follows:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Dec 31 | Interest Expense . . . . . | | 71 | |
| | Premium on Bonds Payable . . . . . | | 9 | |
| | Bonds Payable . . . . . | | 1,000 | |
| | Cash . . . . . | | | 1,080 |
| | To record payment of bond and interest on maturity date. | | | |

Note that the interest expense recorded on the income statement would be $71 ($80 – 9). This is equal to the market rate of interest at the time of bond issue.

## Recording the Issuance of Bonds at a Discount

If the bond is sold for less than $1,000, then the bond has been sold at a **discount**. This results when the bond interest rate is lower than the market interest rate. To demonstrate the journal entries, assume a $1,000, one-year, 8% bond is issued by BDCC when the market interest rate is 9%. The selling amount will be $990.83 using PV calculations where FV = $1,000; PMT = $80; i = 9 (the market rate); and n = 1. We will round the $990.83 to $991 to simplify the demonstration.

The difference between the face value of the bond ($1,000) and the selling price of the bond ($991) is $9. This is the *discount*.

The journal entry to record the transaction on January 1, 2023 is:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jan 1 | Cash | | 991 | |
| | Discount on Bonds Payable | | 9 | |
| | Bonds Payable | | | 1,000 |
| | To record issue of bonds at a discount. | | | |

The $9 amount is a contra liability account and is *deducted* from the face value of the bonds on the balance sheet as follows:

| | | | |
|---|---|---|---|
| | *Liabilities* | | |
| *Current* | | | |
| Bonds payable | | $1,000 | |
| Less: Discount on bonds payable | | (9) | $991 |

On December 31, 2023, when the bonds mature, the following entries would be recorded:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Dec 31 | Interest Expense | | 80 | |
| | Cash | | | 80 |
| | To record interest paid on bonds. | | | |

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Dec 31 | Bonds Payable | | 1,000 | |
| | Cash | | | 1,000 |
| | To record payment of bonds. | | | |

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Dec 31 | Interest Expense | | 9 | |
| | Discount on Bonds Payable | | | 9 |
| | To record write-off of discount against interest. | | | |

Alternatively, a single entry would be preferable as follows:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Dec 31 | Interest Expense . . . . . | | 89 | |
| | Bonds Payable . . . . . | | 1,000 | |
| | Discount on Bonds Payable . . . . . | | | 9 |
| | Cash . . . . . | | | 1,080 |
| | To record payment of bond and interest on maturity date. | | | |

The interest expense recorded on the income statement would be \$89 (\$80 + 9). This is equal to the market rate of interest at the time of bond issue.

These are simplified examples, and the amounts of bond premiums and discounts in these examples are insignificant. In reality, bonds may be outstanding for a number of years, and related premiums and discounts can be substantial when millions of dollars of bonds are issued. These premiums and discounts are *amortized* using the effective interest method over the same number of periods as the related bonds are outstanding. The amortization of premiums and discounts is an intermediate financial accounting topic and is not covered here.

Refer to the Appendix Section 9.8 at the end of this chapter for discussions and illustrations regarding the use of the effective interest method for bonds issued at a premium or discount.

## Bonds Issued in Between Interest Payments

If investors purchase bonds on dates falling in between the interest payment dates, then the investor pays an additional interest amount. This is because the bond issuer always pays the full six months interest to the bondholder on the interest payment date because it is the easiest way to administer multiple interest payments to potentially thousands of investors. For example, if an investor purchases a bond four months after the last interest payment, then the issuer will add these additional four months of interest to the purchase price. When the next interest payment date occurs, the issuer pays the full six months interest to the purchaser. The interest amount paid and received by the bond-holder will net to two months. This makes intuitive sense given that the bonds have only been held for two months making interest for two months the correct amount.

For example, on September 1, 2023, an investor purchases **at face value**, \$100,000, 10-year, 8% bonds with interest payable each May 1 and November 1.

| | |
|---|---|
| Bond payable | \$100,000 |
| Accrued interest (100,000 $\times$ 8% $\times$ 4 $\div$ 12) | 2,667 |
| Total cash paid | \$102,667 |

To record the bond issuance on September 1, with four months' accrued interest:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Sept 1, 2023 | Cash | | 102,667 | |
| | Bond payable | | | 100,000 |
| | Interest payable | | | 2,667 |

To record the first semi-annual interest payment on November 1 and zero out the interest payable:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Nov 1, 2023 | Interest payable | | 2,667 | |
| | Bond interest expense | | 1,333 | |
| | Cash ($100,000 × 8% × 6 ÷ 12) | | | 4,000 |

Note that the bond interest on November 1 is for the amount the bondholder is entitled to, which is two months' of interest.

The December 31 year-end accrued interest entry:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Dec 31, 2023 | Interest expense | | 1,333 | |
| | Interest payable ($100,000 × 8% × 2 ÷ 12) | | | 1,333 |

At maturity, the May 1, 2026, entry would be:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| May 1, 2026 | Bond payable | | 100,000 | |
| | Cash | | | 100,000 |

## Repayment Before Maturity Date

In some cases, a company may want to repay a bond issue before its maturity. Examples of such bonds are callable bonds, which give the issuer the right to call and retire the bonds before maturity. For example, if market interest rates drop, the issuer will want to take advantage of the lower interest rate. In this case, the reacquisition price paid to extinguish and derecognize the bond issuance will likely be slightly higher than the bond carrying value on that date, and the difference will be recorded by the issuing corporation as a loss on redemption. The company can, then, sell a new bond issuance at the new, lower interest rate.

For example, on January 1, 2020, Angen Ltd. issued bonds with a par value of $500,000 at 99, due in 2030. On January 1, 2024, the entire issue was called at 101 and cancelled. The bond payable carrying value on the call date was $497,000. Interest is paid annually and the discount amortized using the straight-line method. The carrying value of the bond on January 1, 2024, would be calculated as follows:

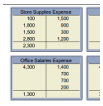
| | |
|---|---|
| Carrying value on call date | $497,000 |
| Re-acquisition price ($500,000 × 101) | 505,000 |
| Loss on redemption | $ 8,000 |

Angen Ltd. would make the following entry:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jan 1, 2024 | Bond Payable | | 500,000 | |
| | Loss on redemption of bonds | | 8,000 | |
| | Cash | | | 505,000 |
| | Discount on Bonds Payable | | | 3,000 |

An exploration is available on the Lyryx site. Log into your Lyryx course to run Issuance of bond at par.

An exploration is available on the Lyryx site. Log into your Lyryx course to run Recording payment of Bond Interest.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Pricing Bonds Using a Calculator.

An exploration is available on the Lyryx site. Log into your Lyryx course to run Issuing Bonds at a Discount.

An exploration is available on the Lyryx site. Log into your Lyryx course to run Issuing Bonds at a Premium.

## 9.5 Long-term Liabilities—Loans Payable

LO5 – Explain, calculate, and record long-term loans.

A *loan* is another form of long-term debt that a corporation can use to finance its operations. Like bonds, loans can be *secured*,

giving the lender the right to specified assets of the corporation if the debt cannot be repaid. For instance a mortgage is a loan secured by specified real estate of the company, usually land with buildings on it.

Unlike a bond, a loan is typically obtained from one lender such as a bank. Also, a loan is repaid in equal *blended* payments over a period time. These payments contain both interest payments and some repayment of principal. As well, a loan does not give rise to a premium or discount because it is obtained at the market rate of interest in effect at the time.

To demonstrate the journal entries related to long-term loans, assume BDCC obtained a three-year, $100,000, 10% loan on January 1, 2023 from First Bank to acquire a piece of equipment. When the loan proceeds are deposited into BDCC's bank account, the following entry is recorded:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jan 1 | Cash . . . . . | | 100,000 | |
| | Loan Payable . . . . . | | | 100,000 |
| | To record 10%, 3-year, $100,000 bank loan. | | | |

The loan is repayable in three annual blended payments. To calculate the payments, PV analysis is used whereby the following keystrokes are entered into a business calculator:

PV = 100000 (the cash received from the bank),

i = 10 (the interest rate),

n = 3 (the term of the loan is three years), and

Compute PMT.

The PMT (or payment) is -40211.48. The result is negative because payments are cash outflows. While the payments remain the same each year, the amount of interest paid decreases and the amount of principal increases. Figure 9.2 illustrates this effect.

| Year Ended Dec. 31 | (a) Beginning Loan Balance (e) | (b) Periodic Interest Expense (a) x 10% | (c) Reduction of Loan Payable (d) - (b) | (d) Total Loan Payment | (e) Ending Loan Balance (a) - (c) |
|---|---|---|---|---|---|
| 2021 | $100,000 | $10,000 | $30,211 | $40,211 | $69,789 |
| 2022 | 69,789 | 6,979 | 33,232 | 40,211 | 36,557 |
| 2023 | 36,557 | 3,654 | 36,557 | 40,211 | -0- |
| | | | $100,000 | | |

Interest expense and the principal balance decrease with each loan payment.

**Figure 9.2: Effect of Blended Interest and Principal Payments**

Figure 9.2 can be used to construct the journal entries to record the loan payments at the end of each year:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Dec. 31, 2023 | Interest Expense | | 10,000 | |
| | Loan Payable | | 30,211 | |
| | Cash | | | 40,211 |
| Dec. 31, 2024 | Interest Expense | | 6,979 | |
| | Loan Payable | | 33,232 | |
| | Cash | | | 40,211 |
| Dec. 31, 2025 | Interest Expense | | 3,654 | |
| | Loan Payable | | 36,557 | |
| | Cash | | | 40,211 |

The amounts in Figure 9.2 can also be used to present the related information on the financial statements of BDCC at each year end. Recall that assets and liabilities need to be classified as current and non-current portions on the balance sheet. Current liabilities are amounts paid within one year of the balance sheet date. That part of the loan payable to First Bank to be paid in the upcoming year needs to be classified as a current liability on the balance sheet. The amount of the total loan outstanding at December 31, 2023, 2024, and 2025 and the current and non-current portions are shown in Figure 9.3:

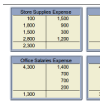
| *A* | *B* | *C* | *D* |
|---|---|---|---|
| *Year ended Dec. 31* | *Ending loan balance per general ledger (Fig 9.2, Col. E)* | *Current portion (Fig. 9.2, Col. C)* | *(B – C) Long-term portion* |
| 2023 | $69,788 | $33,232 | $36,557 |
| 2024 | 36,557 | 36,557 | -0- |
| 2025 | -0- | -0- | -0- |

**Figure 9.3: Current and Long-term Portions of Loan Principal**

Balance sheet presentation would be as follows at the end of 2023, 2024, and 2025:

| | *2023* | *2024* | *2025* |
|---|---|---|---|
| *Current liabilities* | | | |
| Current portion of bank loan | $33,232 | $36,557 | $ -0- |
| *Long-term liabilities* | | | |
| Bank loan (Note X) | 36,557 | -0- | -0- |

Details of the loan would be disclosed in a note to the financial statements. Only the *principal* amount of the loan is reported on the balance sheet. The *interest* expense portion is reported on the income statement as an expense. Because these loan payments are made at BDCC's year end, no interest payable is accrued or reported on the balance sheet.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Equal Payments.

## 9.6 Appendix A: Present Value Calculations

Interest is the time value of money. If you borrow $1 today for one year at 10% interest, its future value in one year is $1.10 ($1 × 110% = $1.10). The increase of 10 cents results from the interest on $1 for the year. Conversely, if you are to pay $1.10 one year from today, the *present value* is $1 — the amount you would need to invest today at 10% to receive $1.10 in one year's time ($1.10/110% = $1). The exclusion of applicable interest in calculating present value is referred to as *discounting*.

If the above $1.10 amount at the end of the first year is invested for an additional year at 10% interest, its future value would be $1.21 ($1.10 x 110%). This consists of the original $1 investment, $.10 interest earned in the first year, and $.11 interest earned during the second year. Note that the second year's interest is earned on both the original $1 and on the 10 cents interest earned during the first year. This increase provides an example of *compound interest* — interest earned on interest.

The following formula can be used to calculate this:

$$\text{FV} = \text{PV} \times (1+i)^n$$

where FV = future value, PV = present value, i = the interest rate, and n = number of periods.

Substituting the values of our example, the calculation would be $\text{FV} = \$1[(1+.1)^2]$, or $1.21.

If the *future* value of today's $1 at 10% interest compounded annually amounts to $1.21 at the end of two years, the *present* value of $1.21 to be paid in two years, discounted at 10%, is $1. The formula to calculate this is just the inverse of the formula shown above, or

$$\text{PV} = \frac{\text{FV}}{(1+i)^n}$$

Substituting the values of our example,

$$\text{PV} = \frac{\$1.21}{(1+.1)^2}$$

That is, the present value of $1.21 received two years in the future is $1. The present value is always less than the future value, since an amount received today can be invested to earn a return (interest) in the intervening period. Calculating the present value of amounts payable or receivable over several time periods is explained more thoroughly below.

Instead of using formulas to calculate future and present values, a business calculator can be used where:

PV = present value

FV = future value

i = interest rate per period (for a semi-annual period where the annual interest rate is 8%, for example, i = 4% and would be entered into the calculator as '4' – not .04)

PMT = dollar amount of interest per period

n = number of periods.

The following three scenarios demonstrate how PV analysis is used to determine the issue price of a $100,000 bond.

1. Big Dog Carworks Corp. issues $100,000 of 3-year, 12% bonds on January 1, 2023 when the market rate of interest is 12%. Interest is paid semi-annually.
2. BDCC's bonds are issued at a premium because the market rate of interest is 8% at the date of issue.
3. BDCC's bonds are issued at a discount because the market rate of interest is 16% at the date of issue.

In each scenario, the bond *principal* of $100,000 will be repaid at the end of three years, and *interest* payments of $6,000 (calculated as $100,000 x 12% x 6/12) will be received every six months for three years.

### Scenario 1: The Bond Contract Interest Rate is 12% and the Market Interest Rate Is 12%

The market interest rate is the same as the bond interest rate, therefore the bond is selling at par. The present value will be $100,000, the face value of the bond, which can be confirmed by entering the following into a business calculator:

FV = -100000 (we enter this as a negative because it is a cash outflow — it is being paid and not received when the bond matures)

i = 6 (calculated as 12%/year ÷ 2 periods per year)

PMT = -6000 (we enter this as a negative because it is a cash outflow — it is being paid and not received each semi-annual interest period)

n = 6 (3-year bond × 2 periods per year)

Compute PV

*The PV = 100000. This result confirms that the bond is being issued at par or face value.*

### Scenario 2: The Bond Contract Interest Rate is 12% and the Market Interest Rate Is 8%

The market interest rate is less than the bond interest rate, therefore the bond is selling at a premium. The present value can be determined by entering the following into a business calculator:

FV = -100000 (we enter this as a negative because it is a cash outflow — it is being paid and not received when the bond matures)

i = 4 (calculated as 8%/year ÷ 2 periods per year)

PMT = -6000 (we enter this as a negative because it is a cash outflow — it is being paid and not received each semi-annual interest period)

n = 6 (3-year bond × 2 periods per year)

Compute PV

*The PV = 110484.27. This confirms that the bond is being issued at a premium. The premium is $10,484.27 calculated as the difference between the present value of $110,484.27 and the face value of $100,000.*

### Scenario 3: The Bond Contract Interest Rate is 12% and the Market Interest Rate Is 16%

The market interest rate is more than the bond interest rate, therefore the bond is selling at a discount. The present value can be determined by entering the following into a business calculator:

FV = -100000 (we enter this as a negative because it is a cash outflow — it is being paid and not received when the bond matures)

i = 8 (calculated as 16%/year ÷ 2 periods per year)

PMT = -6000 (we enter this as a negative because it is a cash outflow — it is being paid and not received each semi-annual interest period)

n = 6 (3-year bond × 2 periods per year)

Compute PV

*The PV = 90754.24. This confirms that the bond is being issued at a discount. The discount is $9,245.76 calculated as the difference between the present value of $90,754.24 and the face value of $100,000.*

## 9.7 Appendix B: Additional Payroll Transactions

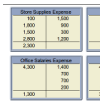
## Net pay calculations

A business maintains a **Payroll Register** that summarizes the hours worked for each employee per pay period. The payroll register details an employee's regular pay plus any overtime pay *before* deductions, known as **gross pay**. An employee is paid their **net pay** (gross pay less total deductions). **Payroll deductions** are amounts subtracted by the employer from an employee's gross pay. Deductions are also known as withholdings or withheld amounts. Deductions can vary depending on the employer. Some deductions are optional and deducted by the employer based on directions made by the employee. Examples of optional deductions include an employee's charitable donations or Canada Savings Bonds contributions.

Certain payroll deductions are required by law. Deductions legally required to be deducted by the employer from an employee's gross pay are income tax, Employment Insurance (EI), and Canada Pension Plan (CPP or QPP in Quebec). The amount of legally required deductions is prescribed and based on an employee's income. For more detailed information regarding the calculation of these deductions, go to: https://www.canada.ca/en/revenue-agency/services/tax/businesses/topics/payroll/calculating-deductions.html

Other deductions that are often withheld by employers include union dues and health care premiums.

All deductions withheld by employers must be paid to the appropriate authority. For example, income tax, EI, and CPP must be paid to the Receiver General for Canada. Charitable donations withheld by an employer would be paid to the charity as directed by the employee.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Net Pay Calculations.

## Recording Payroll

The entry made by the employer to record payroll would debit the appropriate salary or wage expense category and credit:

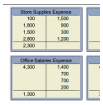
1. Salaries Payable or Wages Payable for the net pay and
2. Each deduction such as EI Payable, CPP Payable, etc.

To demonstrate, assume the following payroll information for Wil Stavely and Courtney Dell:

| | | Deductions | | | | Distribution | |
|---|---|---|---|---|---|---|---|
| | Gross Pay | Income Tax | EI | CPP | Net Pay | Exec Salaries | Office Wages |
| Dell, Courtney | 5,800 | 1,160 | 106 | 280 | 4,254 | 5,800 | |
| Stavely, Will | 3,500 | 700 | 70 | 170 | 2,560 | | 3,500 |

The payroll journal entry would be:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Exec Salaries Expense | | 5,800 | |
| | Office Wages Expense | | 3,500 | |
| | Employee Income Tax Payable | | | 1,860 |
| | EI Payable | | | 176 |
| | CPP (or QPP) Payable | | | 450 |
| | Salaries Payable | | | 6,814 |
| | To record payroll. | | | |



An exploration is available on the Lyryx site. Log into your Lyryx course to run Recording Payroll.

## Recording Employer's CPP and EI Amounts

As already indicated, employers are legally required to deduct/withhold an employee's amount for each of the following from an employee's gross pay:

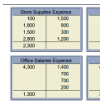
1. the employee's amount for Canada Pension Plan (CPP or QPP in Quebec) and
2. the employee's amount for Employment Insurance (EI).

The employer is required by law to pay Employment Insurance (EI) at the rate of 1.4 times the EI withheld from each employee. For example, if the employer withheld $100 of EI from Employee A's gross pay, the employer would have to pay EI of $140 (calculated as $100 x 1.4). Therefore, the total amount of EI being paid to the government regarding Employee A is $240 (calculated as the employee's portion of $100 plus the employer's portion of $140).

The employer is also required by law to pay CPP (or QPP in Quebec) of an amount that equals the employee amount. For example, if the employer withheld $50 of CPP from Employee A's gross pay, the employer would have to pay CPP of $50. Therefore, the total amount of CPP being paid to the government regarding Employee A is $100 (calculated as the employee's portion of $50 plus the employer's portion of $50).

The journal entry to record the employer's amounts above for EI and CPP would be:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | EI Expense | | 140 | |
| | CPP (or QPP) Expense | | 50 | |
| | EI Payable | | | 140 |
| | CPP (or QPP) Payable | | | 50 |
| | To record employer's EI and CPP amounts. | | | |

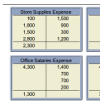


An exploration is available on the Lyryx site. Log into your Lyryx course to run Journalizing Liability for Employer Payroll Amounts.

## Employer's Entries to Pay the Payroll Deductions

Employers are required by law to pay/remit to the Receiver General for Canada all income tax, EI, and CPP amounts deducted/withheld from employees along with the employer's portion of EI and CPP. Any other amounts deducted/withheld from employees such as union dues, health care premiums, or charitable donations must also be paid/remitted to the appropriate organizations. The journal entry to record these payments/remittances by the employer would debit the respective liability account and credit cash. For example, using the information from our previous example, we know that the employer withheld from the employee's gross pay $100 of EI and $50 of CPP. Additionally, the employer recorded its share of the EI ($140) and CPP ($50) amounts. The total EI to be paid is therefore $240 and the total CPP $100. The payment by the employer would be:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | EI Payable[3] | | 240 | |
| | CPP (or QPP[4]) Payable | | 100 | |
| | Cash | | | 340 |
| | To record employer's EI and CPP amounts. | | | |



An exploration is available on the Lyryx site. Log into your Lyryx course to run Journalizing Payment of Employer Amounts.

## Fringe Benefits and Vacation Benefits

Some employers pay for an employee's benefits such as health insurance. The journal entry to record benefits would be:

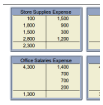
[3] Employee's $100 portion + Employer's $140 portion
[4] Employee's $50 portion + Employer's $50 portion

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Benefits Expense . . . . . | | XX | |
| | Health Insurance Payable . . . . . | | | XX |
| | To record health insurance benefits. | | | |

Employers are also required to pay for vacation time equal to 4% of gross income. The entry to accrue vacation benefits would be:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Benefits Expense . . . . . | | XX | |
| | Estimated Vacation Liability . . . . . | | | XX |
| | To record accrual of vacation benefits. | | | |

When vacation benefits are realized by the employee, the Estimated Vacation Liability account is debited and the appropriate liability accounts to record deductions/withholdings and net pay are credited.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Recording Employee Benefits.

## 9.8 Appendix C: The Effective Interest Rate Method

Another way to calculate the interest expense when a bond is issued at a premium or discount is the **effective interest rate method**.

Below are two examples where a bond is issued at a premium or discount. The interest expense and the amortization of the premium or discount is computed using the effective interest rate method.

Note that the bond's fair value can be determined by either using the market spot rate or by performing a present value calculation. Use of the market spot rate is shown in the bond premium example, while the present value calculation is shown in the bond discount example. These are discussed next.

### Bonds Issued at a Premium

On May 1, 2023, Impala Ltd. issued a 10-year, 8%, $500,000 face value bond at a spot rate of 102 (2% above par). Interest is payable each year on May 1 and November 1. The company uses the

effective interest rate method to calculate interest expense and amortize the bond premium.

The spot rate is 102, so the amount to be paid is $510,000 (500,000 $\times$ 1.02) and, therefore, represents the fair value or present value of the bond issuance on the purchase date.

The entry for the bond issuance is:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| May 1, 2023 | Cash | | 510,000 | |
| | Bond payable | | | 500,000 |
| | Premium on bonds payable | | | 10,000 |

Below is a portion of the effective interest rate method table:

| | **Payment** | **Interest 3.8547%** | **Amortization of Premium** | **Balance** |
|---|---|---|---|---|
| May 1, 2023 | | | | 510,000 |
| Nov 1, 2023 | 20,000 | 19,659 | 341 | 509,659 |
| May 1, 2024 | 20,000 | 19,646 | 354 | 509,305 |
| Nov 1, 2024 | 20,000 | 19,632 | 368 | 508,937 |

Using the information from the schedule, the entries are completed below.

To record the interest payment and amortization of premium on November 1:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Nov 1, 2023 | Interest expense | | 19,659 | |
| | Premium on bonds payable | | 341 | |
| | Cash | | | 20,000 |

Recording the accrued interest at the December 31 year-end uses the relevant portion of the effective interest schedule. For example, at December 31, 2023, the table shows interest of $19,646 and bond amortization of $354 at May, 2024. Prorating these amounts for November and December, or two months, results in the following entry:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Dec 31, 2023 | Interest expense (19,646 $\times$ 2 $\div$ 6) | | 6,549 | |
| | Premium on bonds payable (354 $\times$ 2 $\div$ 6) | | 118 | |
| | Interest payable | | | 6,667 |

To record the interest payment on May 1, 2024, interest expense and amortization will be for the remainder of the table amounts of $19,646 and $354 respectively:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| May 1, 2024 | Interest expense (19,646 − 6,549) | | 13,097 | |
| | Interest payable | | 6,667 | |
| | Premium on bonds payable (354 − 118) | | 236 | |
| | Cash | | | 20,000 |

To record the interest payment on November 1, 2024:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Nov 1, 2024 | Interest expense | | 19,632 | |
| | Premium on bonds payable | | 368 | |
| | Cash | | | 20,000 |

At maturity, the May 1, 2033, entry would be:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| May 1, 2033 | Bond payable | | 500,000 | |
| | Cash | | | 500,000 |

## Bonds Issued at a Discount

On May 1, 2023, Engels Ltd. issued a 10-year, 8%, $500,000 face value bond with interest payable each year on May 1 and November 1. The market rate at the time of issuance is 9% and the company year-end is December 31. In this case the stated rate of 8% is less than the market rate of 9%. This means that the bond issuance is trading at a discount and the fair value, or its present value of the future cash flows, will be less than the face value upon issuance. The present value is calculated as:

| | | |
|---|---|---|
| 20,000 | PMT | (where semi-annual interest using the stated or face rate is $500,000 × 8% × 6 ÷ 12) |
| 4.5 | I/Y | (where 9% market or effective interest is paid twice per year) |
| 20 | N | (where interest is paid twice per year for 10 years) |
| 500,000 | FV | (where a single payment of the face value is due in a future year 2033); |

Expressed in the following variables string, and using a financial calculator, the present value is calculated:

Present value (PV) = (20,000 PMT, 4.5 I/Y, 20 N, 500,000 FV) = $467,480

Had the market spot rate been used, this bond would be trading at a spot rate of 93.496 (or 93.496% of the bond's face value, which is below par). The fair value would also be $467,480 ($500,000 × 0.93496).

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| May 1, 2023 | Cash | | 467,480 | |
| | Discount on bonds payable | | 32,520 | |
| | Bond payable | | | 500,000 |

The stated rate of 8% is less than the market rate of 9%, resulting in a present value less than the face amount of $500,000. This bond issuance is trading at a discount. Since the market rate is greater, the investor would not be willing to purchase bonds paying less interest at the face value. The bond issuer must, therefore, sell these at a discount in order to entice investors to purchase them. The investor pays the reduced price of $467,480. For the seller, the discount amount of $32,520 ($500,000 − 467,480) is then amortized over the life of the bond issuance using the effective interest rate method. The total interest expense for either method will be the same.

The interest schedule for the bond issuance is shown below:

| | Payment | Interest 4.5% | Amortization of Discount | Balance |
|---|---|---|---|---|
| May 1, 2023 | | | | 467,480 |
| Nov 1, 2023 | 20,000 | 21,037 | 1,037 | 468,517 |
| May 1, 2024 | 20,000 | 21,083 | 1,083 | 469,600 |
| Nov 1, 2024 | 20,000 | 21,132 | 1,132 | 470,732 |
| May 1, 2025 | 20,000 | 21,183 | 1,183 | 471,915 |
| Nov 1, 2025 | 20,000 | 21,236 | 1,236 | 473,151 |
| May 1, 2026 | 20,000 | 21,292 | 1,292 | 474,443 |
| Nov 1, 2026 | 20,000 | 21,350 | 1,350 | 475,793 |
| May 1, 2027 | 20,000 | 21,411 | 1,411 | 477,203 |
| Nov 1, 2027 | 20,000 | 21,474 | 1,474 | 478,677 |
| May 1, 2028 | 20,000 | 21,540 | 1,540 | 480,218 |
| Nov 1, 2028 | 20,000 | 21,610 | 1,610 | 481,828 |
| May 1, 2029 | 20,000 | 21,682 | 1,682 | 483,510 |
| Nov 1, 2029 | 20,000 | 21,758 | 1,758 | 485,268 |
| May 1, 2030 | 20,000 | 21,837 | 1,837 | 487,105 |
| Nov 1, 2030 | 20,000 | 21,920 | 1,920 | 489,025 |
| May 1, 2031 | 20,000 | 22,006 | 2,006 | 491,031 |
| Nov 1, 2031 | 20,000 | 22,096 | 2,096 | 493,127 |
| May 1, 2032 | 20,000 | 22,191 | 2,191 | 495,318 |
| Nov 1, 2032 | 20,000 | 22,289 | 2,289 | 497,607 |
| May 1, 2033 | 20,000 | 22,392 | 2,392 | 500,000 |

Using the information from the schedule, the entries are completed below.

To record the interest payment on November 1:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Nov 1, 2023 | Interest expense (467,480 × 4.5%) . . . . . | | 21,037 | |
| | Discount on bonds payable . . . . . | | | 1,037 |
| | Cash . . . . . | | | 20,000 |

Recording the accrued interest at the December 31 year-end uses the relevant portion of the effective interest schedule. For example, at December 31, 2023, the table shows interest of $21,083 and bond amortization of $1,083 at May, 2024. Prorating these amounts for November and December, or two months, results in the following entry

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Dec 31, 2023 | Interest expense (21,083 × 2 ÷ 6) . . . . . | | 7,028 | |
| | Discount on bonds payable (1,083 × 2 ÷ 6) . . . . . | | | 361 |
| | Interest payable . . . . . | | | 6,667 |

To record the interest payment on May 1, 2024, interest expense and amortization will be for the remainder of the table amounts of $21,083 and $1,083 respectively:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| May 1, 2024 | Interest expense (21,083 − 7,028) . . . . . | | 14,055 | |
| | Interest payable . . . . . | | 6,667 | |
| | Discount on bonds payable (1,083 − 361) . . . . . | | | 722 |
| | Cash . . . . . | | | 20,000 |

At maturity, the May 1, 2033, entry would be:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| May 1, 2033 | Bond payable . . . . . | | 500,000 | |
| | Cash . . . . . | | | 500,000 |

## Summary of Chapter 9 Learning Objectives

### LO1 – Identify and explain current versus long-term liabilities.

Current or short-term liabilities are a form of debt that is expected to be paid within the longer of one year of the balance sheet date or one operating cycle. Long-term liabilities are a form of debt that is expected to be paid beyond one year of the balance sheet date or the next operating cycle, whichever is longer. Current and long-term liabilities must be shown separately on the balance sheet.

### LO2 – Record and disclose known current liabilities.

Known current liabilities are those where the payee, amount, and timing of payment are known. Payroll liabilities are a type of known current liability. Employers are responsible for withholding from employees amounts including Employment Insurance (EI), Canada Pension Plan (CPP), and income tax, and then remitting the amounts to the appropriate authority. Sales taxes, including the Goods and Services Tax (GST) and Provincial Sales Tax (PST), must be collected by registrants and subsequently remitted to the Receiver General for Canada. Short-term notes payable, also a known current liability, can involve the accrual of interest if the maturity date falls in the next accounting period.

### LO3 – Record and disclose estimated current liabilities.

An estimated liability is known to exist where the amount, although uncertain, can be estimated. Warranties and income taxes are examples of estimated liabilities. Contingent liabilities are neither a known liability nor an estimated liability and are not recorded if they are determined to exist. A contingent liability exists when it is not probable or it cannot be realiably estimated. A contingent liability is disclosed in the notes to the financial statements.

### LO4 – Identify, describe, and record bonds.

Bonds pay interest at regular intervals to bondholders. The original investment is repaid to bondholders when the bonds mature. There are different types of bonds: secured or unsecured, as well as registered or bearer bonds. Bonds can have a variety of characteristics, including: varying maturity dates, call provisions, conversion privileges, sinking fund requirements, or dividend restrictions. Bonds are issued: (a) at par (also known as the face value) when the market interest rate is the same as the bond (or contract) interest rate; (b) at a discount when the market interest rate is higher than the bond interest rate; or (c) at a premium when the market interest rate is lower than the bond interest rate.

### LO5 – Explain, calculate, and record long-term loans.

A loan is a form of long-term debt that can be used by a corporation to finance its operations. Loans can be secured and are typically obtained from a bank. Loans are often repaid in equal blended payments containing both interest and principal.

## Discussion Questions

1. What is the difference between a current and long-term liability?
2. What are some examples of known current liabilities?
3. How are known current liabilities different from estimated current liabilities?
4. What are some examples of estimated current liabilities?
5. How is an estimated current liability different from a contingent liability?
6. What is a bond? ...a bond indenture? Why might a trustee be used to administer a bond indenture?

7. List and explain some bondholder rights.
8. How are different bond issues reported in the financial statements of a corporation?
9. What are three reasons why bonds might be redeemed before their maturity date?
10. Why would investors pay a premium for a corporate bond? Why would a corporation issue its bonds at a discount? Explain, using the relationship between the bond contract interest rate and the prevailing market interest rate.
11. How is an unamortised bond premium or discount disclosed in accordance with GAAP?
12. If the bond contract interest rate is greater than that required in the market on the date of issue, what is the effect on the selling price of the bond? Why?
13. What method is used to amortise premiums and discounts?
14. How is a loan payable similar to a bond? How is it different?
15. Distinguish between future value and present value. What is the time value of money? Why is it important?
16. How is the actual price of a bond determined?

## Exercises

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**EXERCISE 9–1 (LO1)**

Ajam Inc. shows the following selected adjusted account balances at March 31, 2024:

| | |
|---|---|
| Accounts Payable | $ 58,000 |
| Wages Payable | 102,000 |
| Accumulated Depreciation – Machinery | 69,000 |
| Income Taxes Payable | 92,000 |
| Note Payable, due May 15, 2026 | 108,000 |
| Note Payable, due November 30, 2024 | 64,000 |
| Mortgage Payable | 320,000 |
| Accounts Receivable | 71,000 |

Note: $240,000 of the mortgage payable balance is due one year beyond the balance sheet date; the remainder will be paid within the next 12 months.

**Required**: Prepare the liability section of Ajam's March 31, 2024 balance sheet.

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**EXERCISE 9–2 (LO2)**

On June 7, 2024, Dilby Mechanical Corp. completed $50,000 of servicing work for a client and billed them for that amount plus GST of $2,500 and PST of $3,500; terms are n20.

**Required**:

**a.** Prepare the journal entry as it would appear in Dilby's accounting records.

**b.** Assume the receivable established on June 7 was collected on June 27. Record the entry.

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**EXERCISE 9–3 (LO2)** Watch video

Libra Company borrowed $300,000 by signing a 3.5%, 45-day note payable on July 1, 2024. Libra's year-end is July 31. Round all calculations to two decimal places.

**Required**:

**a.** Prepare the entry to record the issuance of the note on July 1, 2024.

**b.** Prepare the entry to accrue interest on July 31, 2024.

**c.** On what date will this note mature?

**d.** Prepare the entry to record the payment of the note on the due date.

---

**EXERCISE 9–4 (LO3)**

On January 23, 2024, Zenox Company sold $105,000 of furniture on account that had a cost of $82,000. All of Zenox's sales are covered by an unconditional 24-month replacement warranty. Historical data indicates that warranty costs average 2% of the cost of sales. On January 29, 2024, Zenox replaced furniture with a cost of $2,000 that was covered by warranty.

**Required**:

**a.** Prepare the journal entry to record the estimated warranty liability for January.

**b.** Prepare the entry to record the warranty expense incurred in January.

**c.** Assuming the Estimated Warranty Liability account had a credit balance of $740 on January 1, 2024, calculate the balance at January 31, 2024 after the entries above were posted.

---

**EXERCISE 9–5 (LO2)**

An extract from the trial balance of Paragon Corporation at December 31, 2023 is reproduced below:

| | | *Amount in unadjusted trial balance* | *Amount in adjusted trial balance* |
|---|---|---|---|
| a. | Salaries expense (J. Smith) | $50,000 | $52,000 |
| b. | Employee income taxes payable | -0- | 500 |
| c. | Employment insurance payable | 1,000 | 96 |
| d. | Government pension payable | -0- | 160 |

Additional Information: Employees pay 2% of their gross salaries to the government employment insurance plan and 4% of gross salaries to the government pension plan. The company matches employees' government pension contributions 1 to 1, and employment insurance contributions 1.4 to 1.

**Required**:

**a.** Prepare the adjusting entry that was posted, including a plausible description.

**b.** Prepare the journal entries to record the payments on January 5, 2024 to employee J. Smith and the Government of Canada.

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**EXERCISE 9–6 (LO3)**

Paul's Roofing Corporation paid monthly corporate income tax instalments of $500 commencing February 15, 2023. The company's income before income taxes for the year ended December 31, 2023 was $15,000. The corporate income tax rate is 40%. Paul's Roofing paid the 2023 corporate income taxes owing on January 31, 2024.

**Required**:

**a.** Record the February 15, 2023 payment.

**b.** Record the 2023 corporate income tax expense.

**c.** Record the January 31, 2024 payment.

Leong Corporation was authorized to issue $500,000 face value bonds on January 1, 2022. The corporation issued $100,000 of face value bonds on that date. The bonds will mature on December 31, 2025. Interest is paid semi-annually on June 30 and December 31 each year. The bond interest rate per the terms of the indenture is 12% per year.

---

**EXERCISE 9–7 (LO4)**

Leong Corporation was authorized to issue $500,000 face value bonds on January 1, 2022. The corporation issued $100,000 of face value bonds on that date. The bonds will mature on December 31, 2025. Interest is paid semi-annually on June 30 and December 31 each year. The bond interest rate per the terms of the indenture is 12% per year.

**Required**: Answer the questions for each of the following cases.

Case A: The bonds were issued at face value.

Case B: The bonds were issued for $112,000.

Case C: The bonds were issued for $88,000.

**a.** How much cash does Leong receive for the bonds?

**b.** How much annual interest must the corporation pay? On what amount does the corporation pay?

**c.** Prepare the journal entry to record the sale of the bonds.

**d.** Record the entries applicable to interest and straight-line amortization for June 30, 2022 and for December 31, 2022.

**EXERCISE 9–8 (LO4) Bonds Issued at a Discount and Retired**

On January 1, 2022, the date of bond authorization, Nevada Inc. issued a 3-year, 12-per cent bond with a face value of $100,000 at 94. Semi-annual interest is payable on June 30 and December 31.

**Required**:

**a.** Prepare journal entries to record the following transactions:

i. The issuance of the bonds.

ii. The interest payment on June 30, 2022.

iii. The amortization of the discount on June 30, 2022 (use the straight-line method of amortization).

**b.** Calculate the amount of interest paid in cash during 2022 and the amount of interest expense that will appear in the 2022 income statement.

**c.** Prepare a partial balance sheet at December 31, 2022 showing how the bonds payable and the discount on the bonds should be shown on the balance sheet.

**d.** Prepare the journal entry to record the retirement of the bonds on December 31, 2024.

**e.** Prepare the journal entry on January 1, 2023, assuming the bonds were called at 102.

**EXERCISE 9–9 (LO4) Bonds Issued at a Premium and Retired**

On January 1, 2024, the date of bond authorization, Sydney Corp. issued 3-year, 12-per cent bonds with a face value of $200,000 at 112. Semi-annual interest is payable on June 30 and December 31.

**Required**:

**a.** Prepare the journal entries to record the following transactions:

i. The issuance of the bonds.

ii. The interest payment on June 30, 2024.

iii. The amortization of the premium on June 30, 2024 (use the straight-line method of amortization).

**b.** Calculate the amount of interest paid in cash during 2024 and the amount of interest expense that will appear in the 2024 income statement. Why are these amounts different?

**c.** Prepare a partial balance sheet at December 31, 2024 showing how the bonds payable and the premium on bonds should be shown on the balance sheet.

**d.** Prepare the journal entry on January 1, 2027 when the bonds were called at 106.

---

**EXERCISE 9–10 (LO4) Bonds Issued between Interest Dates**

On September 1, 2022, Harvort Inc. issues $100,000, 10-year, 8% bonds at par. Interest is payable each May 1 and November 1. The company year-end is December 31.

**Required**: Prepare the journal entries to record the following transactions:

**a.** The issuance of the bonds.

**b.** The journal entries for 2023.

**c.** The bond at maturity.

**d.** Prepare a partial balance sheet at December 31, 2023 showing how the bonds and interest payable should be shown on the balance sheet.

---

**EXERCISE 9–11 (LO5) Long Term Loan Payable**

Rosedale Corp. obtained a $50,000 loan from Second Capital Bank on January 1, 2026. It purchases a piece of heavy equipment for $48,000 on the same day. The loan bears interest at 6% per year on the unpaid balance and is repayable in three annual blended payments of $18,705 on December 31 each year.

**Required**:

**a.** Prepare the journal entries to record the following transactions:

i. Receipt of loan proceeds from the bank.

ii. Purchase of the equipment.

**b.** Prepare the loan repayment schedule.

**c.** Prepare the journal entry to record the first loan payment.

**d.** Prepare the liabilities section of the balance sheet in good form, including all disclosures, for this loan at December 31, 2026. (Hint: The current portion of a long-term liability must be reported.)

---

**EXERCISE 9–12 (LO4)**

**Required**: Complete the following by responding either *premium* or *discount*.

**a.** If the market rate of interest is 15 per cent and the bond interest rate is 10 per cent, the bonds will sell at a _____.

**b.** If a bond's interest rate is 10 per cent and the market rate of interest is 8 per cent, the bonds will sell at a _____.

**c.** In computing the carrying amount of a bond, unamortised _____ is subtracted from the face value of the bond.

**d.** In computing the carrying amount of a bond, unamortised _____ is added to the face value of the bond.

**e.** If a bond sells at a _____, an amount in excess of the face value of the bond is received on the date of issuance.

**f.** If a bond sells at a _____, an amount less than the face value of the bond is received on the date of issuance.

---

**EXERCISE 9–13 (LO4)**

On January 1, 2024, the date of bond authorization, Nevada Inc. issued a 3-year, 12-per cent bond with a face value of $100,000 at 94. Semi-annual interest is payable on June 30 and December 31.

**Required**: Prepare the journal entry to record the issuance of the bonds on January 1, 2024.

---

**EXERCISE 9–14 (LO4)**

On January 1, 2024, the date of bond authorization, Sydney Corp. issued 3-year, 12-per cent bonds with a face value of $200,000 at 112. Semi-annual interest is payable on June 30 and December 31.

**Required**: Prepare the journal entry to record the issuance of the bonds on January 1, 2024.

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**EXERCISE 9–15 (LO5)**

Rosedale Corp. obtained a $50,000 loan from Second Capital Bank on January 1, 2023. It purchased a piece of heavy equipment for $48,000 on the same day. The loan bears interest at 6% per year on the unpaid balance and is repayable in three annual blended payments of $18,705 on December 31 each year.

**Required**:

**a.** Prepare the journal entries to record the following transactions:

i. Receipt of loan proceeds from the bank.

ii. Purchase of the equipment.

**b.** Prepare the loan repayment schedule.

**c.** Prepare the journal entry to record the first loan payment.

## Problems

---

**PROBLEM 9–1 (LO5)** Watch video

Zinc Corp. obtained a $100,000 loan from First Capital Bank on December 31, 2023. It purchased a piece of heavy equipment for $95,000 on January 2, 2024. The loan bears interest at 8% per year on the unpaid balance and is repayable in four annual blended payments of $30,192 on December 31 each year, starting in 2024.

**Required**:

1. Prepare the journal entries to record the following transactions:

(a) Receipt of loan proceeds from the bank.

(b) Purchase of the equipment.

2. Prepare the loan repayment schedule in the following format:

Zinc Corp.
Loan Repayment Schedule

| | *A* | *B* | *C* | *D* | *E* |
|---|---|---|---|---|---|
| *Year Ended Dec. 31* | *Beginning Loan Balance* | *Interest Expense* | *(D − B) Reduction of Loan Payable* | *Total Loan Payment* | *(A − C) Ending Loan Balance* |
| 2024 | | | | | |
| 2025 | | | | | |
| 2026 | | | | | |
| 2027 | | | | | |

3. Prepare the journal entry to record the last loan payment.

4. Prepare a partial balance sheet showing the loan liability at December 31, 2025

# Chapter 10

# Equity Financing

Corporations sometimes finance a large portion of their operations by issuing equity in the form of shares. This chapter discusses in detail the nature of the corporate form of organization, the different types of shares used to obtain funds for business activities, and how these transactions are recorded. It also expands on the concept of dividends.

## Chapter 10 Learning Objectives

LO1 – Identify and explain characteristics of the corporate form of organization and classes of shares.

LO2 – Record and disclose preferred and common share transactions including share splits.

LO3 – Record and disclose cash dividends.

LO4 – Record and disclose share dividends.

LO5 – Calculate and explain the book value per share ratio.

## Concept Self-Check

Use the following as a self-check while working through Chapter 10.

1. What are the characteristics of a corporation?
2. What types of shares can a corporation issue to investors?
3. What are the rights of common shareholders in a corporation?
4. How are the rights of common shareholders different from those of preferred shareholders?
5. How are share transactions recorded?
6. When both preferred and common shares are issued by a corporation, how is this disclosed in the equity section of the balance sheet?
7. What is meant by *authorized* shares?

8. How do *issued* shares differ from *outstanding* shares?
9. What is a share split?
10. How does a share split affect equity?
11. How are cash dividends recorded?
12. What is a share dividend and how is it recorded?
13. How does a share dividend affect equity?
14. What is book value and how is it calculated?

**NOTE:** The purpose of these questions is to prepare you for the concepts introduced in the chapter. Your goal should be to answer each of these questions as you read through the chapter. If, when you complete the chapter, you are unable to answer one or more the Concept Self-Check questions, go back through the content to find the answer(s). Solutions are not provided to these questions.

## 10.1 The Corporate Structure

LO1 – Identify and explain characteristics of the corporate form of organization and classes of shares.

The accounting equation expresses the relationship between assets owned by a corporation and the claims against those assets by creditors and shareholders. Accounting for equity in a corporation requires a distinction between the two main sources of shareholders' equity: share capital and retained earnings. Their relationship to the accounting equation is shown in Figure 10.1.

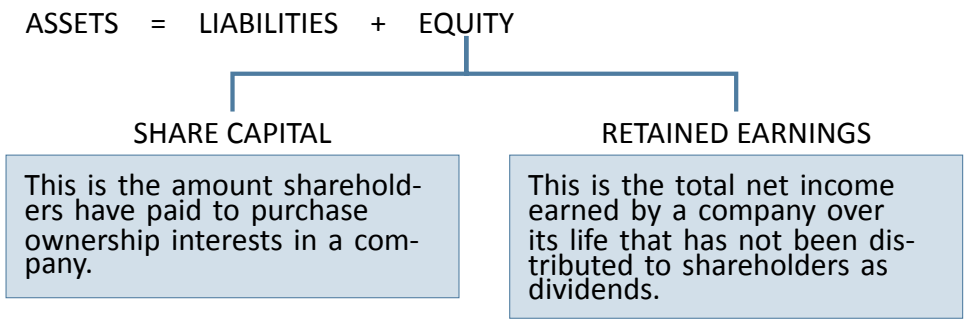



**Figure 10.1: Share Capital Versus Retained Earnings**

## Corporate Characteristics

A unique characteristic of corporations is that they are legally separate from their owners, who are called **shareholders**. Each unit of ownership of a corporation is called a **share**. If a corporation issues 1,000 shares and you own 100 of them, you own 10% of the company. Corporations can be *privately-held* shares or *publicly-held* shares. A privately-held corporation's shares are not issued for sale to the general public. A publicly-held corporation offers its shares for sale to the general public, sometimes on a stock market like the Toronto Stock Exchange or the New York Stock Exchange.

A corporation has some of the same rights and obligations as individuals. For instance, it pays income taxes on its earnings, can enter into legal contracts, can own property, and can sue and be sued. A corporation also has distinctive features. It is separately regulated by law, has an indefinite life, its owners have limited liability, and it can usually acquire capital more easily than an individual. These features are discussed below.

- **Creation by law**

A corporation is formed under legislation enacted by a country or a political jurisdiction within it. For instance, in Canada a corporation can be formed under either federal or provincial laws. Although details may vary among jurisdictions, a legal document variously described as *articles of incorporation*, a *memorandum of association*, or *letters patent* is submitted for consideration to the appropriate government by prospective shareholders. The document lists the **classes** or types of shares that will be issued as well as the total number of shares of each class that can be issued, known as the **authorized** number of shares.

When approved, the government issues a certificate of incorporation. Investors then purchase shares from the corporation. They meet and elect a board of directors. The board formulates corporation policy and broadly directs the affairs of the corporation. This includes the appointment of a person in charge of day-to-day operations, often called a president, chief executive officer, or similar title. This person in turn has authority over the employees of the corporation.

A shareholder or group of shareholders who control more than 50% of the voting shares of a corporation are able to elect the board of directors and thus direct the affairs of the company. In a large public corporation with many shareholders, minority shareholders with similar ideas about how the company should be run sometimes delegate their votes to one person who will vote on their behalf by signing a **proxy** statement. This increases their relative voting power, as many other shareholders may not participate in shareholders' meetings.

Shareholders usually meet annually to vote for a board of directors — either to re-elect the current directors or to vote in new directors. The board meets regularly, perhaps monthly or quarterly, to review the operations of the corporation and to set policies for future operations. The board may decide to distribute some assets of the corporation as a dividend to shareholders. It may

also decide that some percentage of the assets of the corporation legally available for dividends should be made unavailable; in this case, a *restriction* is created. Accounting for such restrictions is discussed later in this chapter.

Wherever it is incorporated, a company is generally subject to the following regulations:

1. It must provide timely financial information to investors.
2. It must file required reports with the government.
3. It cannot distribute profits arbitrarily but must treat all shares of the same class alike.
4. It is subject to special taxes and fees.

Despite these requirements, a corporation's advantages usually outweigh its disadvantages when compared to other forms of business such as a proprietorship or partnership. These features of a corporation are described further below. Proprietorships and partnerships are discussed in more detail in Chapter 13.

- **Indefinite life**

A corporation has an existence separate from that of its owners. Individual shareholders may die, but the corporate entity continues. The life of a corporation comes to an end only when it is dissolved, becomes bankrupt, or has its charter revoked for failing to follow laws and regulations.

- **Limited liability**

The corporation's owners are liable only for the amount that they have invested in the corporation. If the corporation fails, its assets are used to pay creditors. If insufficient assets exist to pay all debts, there is no further liability on the part of shareholders. This situation is in direct contrast to a proprietorship or a partnership. In these forms of organization, creditors have full recourse to the personal assets of the proprietorship or partners if the business is unable to fulfill its financial obligations. For the protection of creditors, the limited liability of a corporation must be disclosed in its name. The words "Limited," "Incorporated," or "Corporation" (or the abbreviations Ltd., Inc., or Corp.) are often used as the last word of the name of a company to indicate this corporate form.

- **Ease of acquiring capital**

Issuing shares allows many individuals to participate in the financing of a corporation. Both small and large investors are able to participate because of the relatively small cost of a share, and the ease with which ownership can be transferred — shares are simply purchased or sold. Large amounts of capital can be raised by a corporation because the risks and rewards of ownership can be spread among many investors.

A corporation only receives money when shares are first issued. Once a share is issued, it can be bought and sold a number of times by various investors. These subsequent transactions between investors do not affect the corporation's balance sheet.

### Income Taxes on Earnings

Because corporations are considered separate legal entities, they pay income taxes on their earnings. To encourage risk-taking and entrepreneurial activity, certain types of corporations may be taxed at rates that are lower than other corporations and individual shareholders' income tax rates. This can encourage research and development activity or small-company start-ups, for instance.

### Classes of Shares

There are many types of shares, with differences related to voting rights, dividend rights, liquidation rights, and other preferential features. The rights of each shareholder depend on the class or type of shares held.

Every corporation issues **common shares**. The rights and privileges usually attached to common shares are outlined below.

- The right to participate in the management of the corporation by voting at shareholders' meetings (this participation includes voting to elect a board of directors; each share normally corresponds to one vote).
- The right to receive dividends when they are declared by the corporation's board of directors.
- The right to receive assets upon liquidation of the corporation.
- The right to appoint auditors through the board of directors.

For other classes of shares, some or all of these rights are usually restricted. The articles of incorporation may also grant the shareholders the **pre-emptive** right to maintain their proportionate interests in the corporation if additional shares are issued.

If the company is successful, common shareholders may receive dividend payments. As well, the value of common shares may increase. Common shareholders can submit a proposal to raise any matter at an annual meeting and have this proposal circulated to other shareholders at the corporation's expense. If the corporation intends to make fundamental changes in its business, these shareholders can often require the corporation to buy their shares at their fair value. In addition, shareholders can apply to the courts for an appropriate remedy if they believe their interests have been unfairly disregarded by the corporation.

Some corporations issue different classes of shares in order to appeal to as large a group of investors as possible. This permits different risks to be assumed by different classes of shareholders in the same company. For instance, a corporation may issue common shares but divide these into different classes like class A and class B common shares. When dividends are declared, they might only be paid to holders of class A shares.

**Preferred shares** is a class of share where the shareholders are entitled to receive dividends before common shareholders. These shares usually do not have voting privileges. Preferred shareholders typically assume less risk than common shareholders. In return, they receive only a limited amount of dividends. Issuing preferred shares allows a corporation to raise additional capital without requiring existing shareholders to give up control. Preferred shares are listed before common shares in the equity section of the balance sheet. Other characteristics of preferred shares and dividend payments are discussed later in this chapter.

The shares of a corporation can have a different status at different points in time. They can be **unissued** or **issued**, issued and **outstanding**, or issued and reacquired by the corporation (called **treasury shares**). The meaning of these terms is summarized in Figure 10.2:

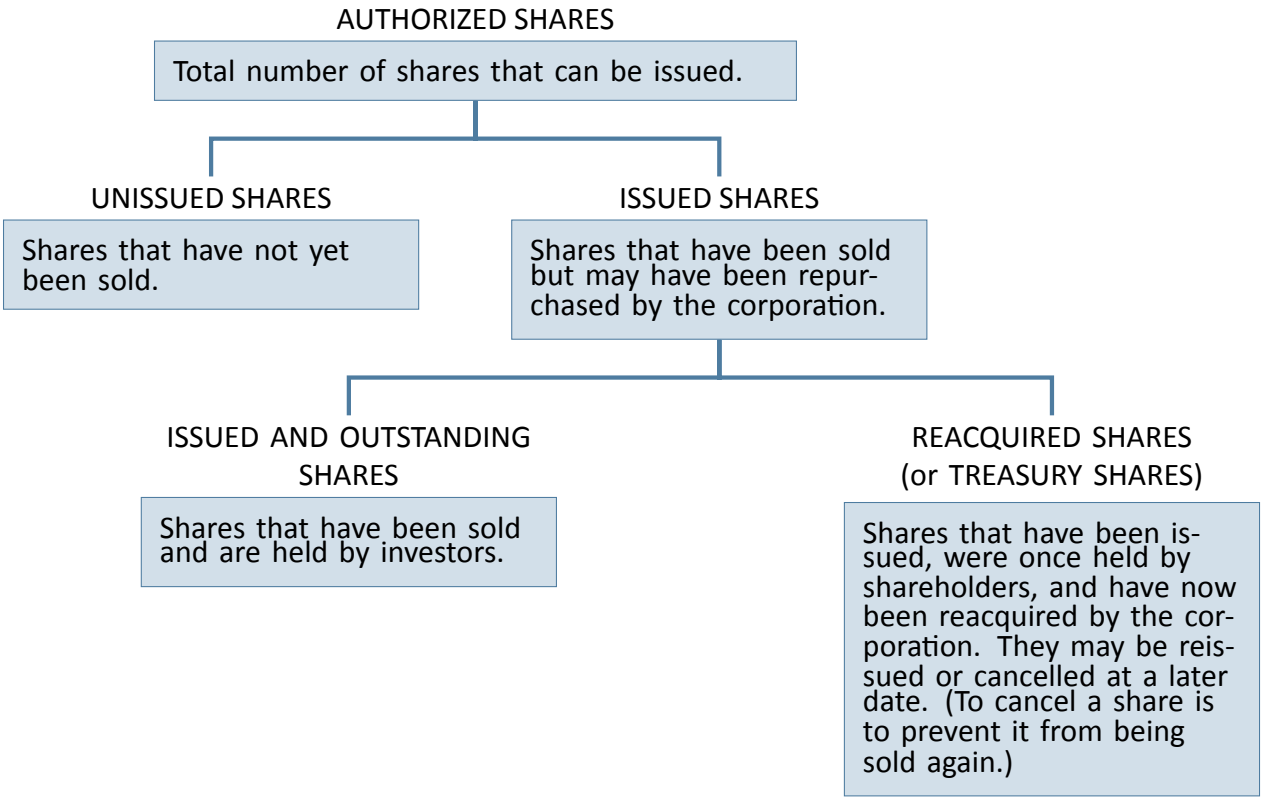



**Figure 10.2: Status of Shares**

## The Debt Versus Equity Financing Decision

Many factors influence management in its choice between the issue of debt and the issue of share capital. One of the most important considerations is the potential effect of each of these financing methods on the present shareholders.

Consider the example of Old World Corporation, which has 100,000 common shares outstanding, is a growth company, and is profitable. Assume Old World requires $30 million in cash to finance a new plant. Management is currently reviewing three financing options:

1. Issue 12% debt, due in three years
2. Issue 300,000 preferred shares at $100 each (dividend $8 per share annually)
3. Issue an additional 200,000 common shares at $150 each.

Management estimates that the new plant should result in income before interest and tax of $6

million. Management has prepared the following analysis to compare and evaluate each financing option.

| | *Plan 1:* Issue Debt | *Plan 2:* Issue Preferred Shares | *Plan 3:* Issue Common Shares |
|---|---|---|---|
| Income before interest and income taxes | $ 6,000,000 | $ 6,000,000 | $ 6,000,000 |
| *Less:* Interest expense ($30M x 12%) | (3,600,000) | -0- | -0- |
| Income before taxes | $ 2,400,000 | $ 6,000,000 | $ 6,000,000 |
| *Less:* Income taxes assumed to be 50% | (1,200,000) | (3,000,000) | (3,000,000) |
| Net income | 1,200,000 | 3,000,000 | 3,000,000 |
| *Less:* Preferred dividends (300,000 x $8 per share) | -0- | (2,400,000) | -0- |
| Net income available to common shareholders | $ 1,200,000 | $ 600,000 | $ 3,000,000 |
| Number of common shares outstanding | 100,000 | 100,000 | 300,000 |
| Earnings per common share[1] | $ 12 | $ 6 | $ 10 |

Plan 1, the issue of debt, has several advantages for existing common shareholders.

- **Advantage 1: Earnings per share**

If the additional long-term financing were acquired through the issue of debt, the corporate earnings per share (EPS) on each common share would be $12. This EPS is greater than the EPS earned through financing with either preferred shares or additional common shares. On this basis alone, the issue of debt is more financially attractive to existing common shareholders.

- **Advantage 2: Control of the corporation**

Creditors have no vote in the affairs of the corporation. If additional common shares were issued, there might be a loss of corporate control by existing shareholders because ownership would be distributed over a larger number of shareholders, or concentrated in the hands of one or a few new owners. In the Old World case, issuing common shares would increase the number threefold from 100,000 to 300,000 shares.

- **Advantage 3: Income taxes expense**

[1]The amount of net income earned in a year can be divided by the number of common shares outstanding to establish how much return has been earned for each outstanding share. EPS is calculated as:

$$\frac{\text{Net income}}{\text{Number of common shares outstanding}}$$

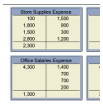
EPS is quoted in financial markets and is disclosed on the income statement of publicly-traded companies. It is discussed in more detail in Chapter 12.

Interest expense paid on debt is deductible from income for income tax purposes. Dividend payments are distributions of retained earnings, which is after-tax income. Thus, dividends are not deductible again for tax purposes. With a 50% income tax rate, the after-tax interest expense to the corporation is only 6% (12% x 50%), with the other 6% being used to offset income tax that would be otherwise due. However, for preferred shares 8% ($8/$100) of the money raised will be paid to the new shareholders as preferred dividends in the first year.

### Debt Financing Disadvantages

There are also some disadvantages in long-term financing with debt that must be carefully reviewed by management and the board of directors. The most serious disadvantage is the possibility that the corporation might earn less than $6 million before interest expense and income taxes. The interest expense is a fixed amount. It must be paid to creditors at specified times, unlike dividends.

Another disadvantage is the fact that debt must be repaid at maturity, whether or not the corporation is financially able to do so. Shares do not have to be repaid.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Debt vs Equity Financing.

## 10.2 Recording Share Transactions

LO2 – Record and disclose preferred and common share transactions including share splits.

Shares have a **stated (or *nominal*) value**—the amount for which they are issued. Alternatively, but rarely, shares will have a **par-value** which is the amount stated in the corporate charter below which shares cannot be sold upon initial offering. For consistency, we will assume all shares have a stated value.

To demonstrate the issuance and financial statement presentation of shares, assume that New World Corporation is authorized to issue share capital consisting of an unlimited number of voting common shares and 100,000 non-voting preferred shares.

**Transaction 1:** On January 1, 2023, New World sells 1,000 common shares to its first shareholders for $10 per share, or $10,000 cash. New World records the following entry:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jan 1 | Cash . . . . . | | 10,000 | |
| | Common Shares . . . . . | | | 10,000 |
| | To record the issuance of 1,000 common shares at $10 per share. | | | |

**Transaction 2:** On February 1, 2023, 2,500 preferred shares are issued to the owner of land and buildings that have a fair value of $35,000 and $50,000, respectively. The journal entry to record this transaction is:

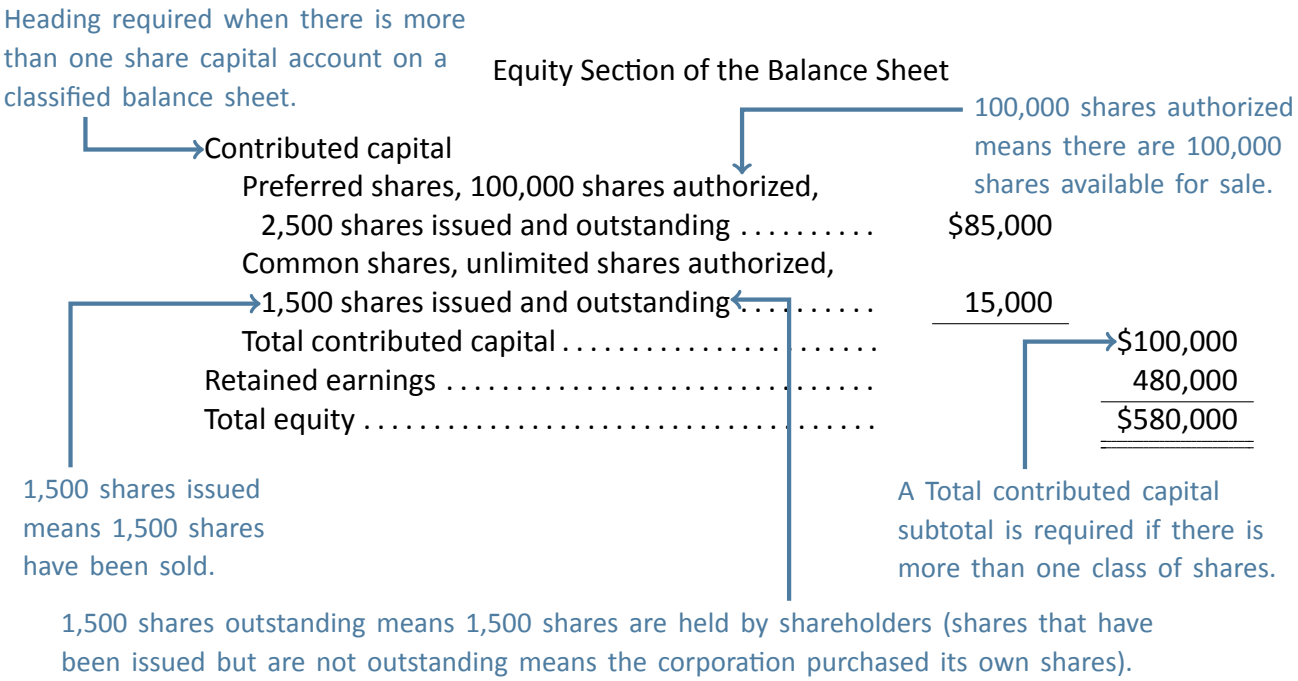
| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Feb 1 | Land . . . . . | | 35,000 | |
| | Building . . . . . | | 50,000 | |
| | Preferred Shares . . . . . | | | 85,000 |
| | To record the issuance of 2,500 preferred shares in exchange for land and buildings. | | | |

Usually, one or more individuals decide to form a corporation and before the corporation is created, may then use their own funds to pay for legal and government fees, travel and promotional costs, and so on. When the corporation is legally formed, it is not unusual for the corporation to issue shares to these organizers for these amounts. These expenditures are referred to as **organization costs** (**start-up costs**) and are expensed.

**Transaction 3:** On March 1, 2023, 500 common shares are issued to the organizers of New World to pay for their services, valued at $5,000. The journal entry to record this transaction is:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Mar 1 | Organization Expense . . . . . | | 5,000 | |
| | Common Shares . . . . . | | | 5,000 |
| | To record the issuance of 500 common shares in exchange for organization efforts. | | | |

Assuming no further share transactions and a retained earnings balance of $480,000, the equity section of the New World Corporation balance sheet would show the following at December 31, 2023:




**Transaction 4:** Corporate legislation permits a company to reacquire some of its shares, provided that the purchase does not cause insolvency. A company can repurchase and then cancel the repurchased shares. When repurchased shares are cancelled, they are no longer issued and no longer outstanding. A company can also repurchase shares and then hold them in treasury. Treasury shares are issued but not outstanding. A company can use treasury shares for purposes such as giving to employees as an incentive or bonus.

Assume that New World Corporation decides to repurchase 200 common shares on December 1, 2024 and hold them in treasury. Assume that the price of each share is the average issue price of the outstanding common shares, or $10. The journal entry to record the repurchase is:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Dec 1 | Common Shares . . . . . | | 2,000 | |
| | Cash . . . . . | | | 2,000 |
| | To record the repurchase of 200 common shares at $10 per share to be held in treasury. | | | |

Assuming no further transactions, the equity section of the New World Corporation balance sheet would show the following at December 31, 2024:

**Equity Section of the Balance Sheet**

| | | |
|---|---|---|
| Contributed capital | | |
| Preferred shares, 100,000 shares authorized, 2,500 shares issued and outstanding | $85,000 | |
| Common shares, unlimited shares authorized, 1,500 shares issued; 1,300 shares outstanding | 13,000 | |
| Total contributed capital | | $98,000 |
| Retained earnings | | 480,000 |
| Total equity | | $578,000 |

Notice that the repurchase of shares caused a decrease in both the paid-in capital for the common shares ($2,000 decrease) and in the number of shares outstanding decreased (decreased by 200 shares). If the 200 shares had been cancelled, both the number of shares issued and outstanding would have decreased by 200 shares.

**Transaction 5: Shares Retirement**

If New World Corporation decides to repurchase and cancel 100 common shares on December 15, 2024. Assume that the purchase price is $9, which is less than the average issue price of $10 per share. The entry would be:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Dec 15 | Common Shares ($10 × 100 shares) | | 1,000 | |
| | Contributed surplus, shares retirement | | | 100 |
| | Cash ($9 × 100 shares) | | | 900 |
| | To record the repurchase of 100 common shares at $9 per share. | | | |

The contributed surplus account is reported in the equity section of the balance sheet, below the share capital accounts. The share capital accounts and the contributed capital account are then subtotalled and reported as ***total contributed capital*** of $99,100 as shown below:

**Equity Section of the Balance Sheet**

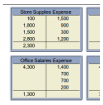
| | | |
|---|---|---|
| Contributed capital | | |
| Preferred shares, 100,000 shares authorized, 2,500 shares issued and outstanding | $85,000 | |
| Common shares, unlimited shares authorized, 1,400 shares issued and outstanding | 14,000 | |
| Contributed surplus | 100 | |
| Total contributed capital | | $99,100 |
| Retained earnings | | 480,000 |
| Total equity | | $579,100 |

If New World Corporation also repurchases and cancels another 150 common shares on December 17, 2024, at a price of $11, this is more than the average issue price of $10 per share, and the entry

would be:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Dec 17 | Common Shares ($10 × 150 shares) . . . . . | | 1,500 | |
| | Contributed suplus, shares retirement . . . | | 100 | |
| | Retained earnings . . . . . | | 50 | |
| | Cash ($11 × 150 shares) . . . . . | | | 1650 |
| | To record the repurchase of 150 common shares at $11 per share. | | | |

The excess of the purchase price of $11 over the average shares issue price of $10 totals $150 for 150 shares. This would be debited to retained earnings. However, in this case, New World already has contributed surplus of $100 from the December 15 shares cancellation, so this amount must be reversed first. The remainder, or $50, is debited to retained earnings.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Issuing Share Capital.

## Share Splits

A corporation may find its shares are selling at a high price on a stock exchange, perhaps putting them beyond the reach of many investors. To increase the marketability of a corporation's shares, management may opt for a **share split**. A share split increases the number of shares issued and outstanding, and lowers the cost of each new share. The originally-issued shares are exchanged for a larger number of new shares.

Assume that on December 1, 2023 New World Corporation declares a 3-for-1 common share split. This results in three new common shares replacing each currently-issued and outstanding common share. The number of issued and outstanding shares has now been tripled. The market price of each share will decrease to about one-third of its former market price. Since there is no change in the dollar amount of common shares, no debit-credit entry is required to record the share split. Instead, a memorandum entry would be recorded in the general ledger indicating the new number of shares issued and outstanding, as follows:

Common Shares Acct. No. 320

| Date | | Description | Debit | Credit | DR/CR | Balance |
|---|---|---|---|---|---|---|
| 2023 | | | | | | |
| Dec. | 1 | Memorandum Entry: | | | | |
| | | Because of a 3-for-1 share split, the issued and outstanding common shares | | | | |
| | | increased, respectively, from 1,500 and 1,300 to 4,500 and 3,900. | | | | |

The dollar amount shown on the balance sheet and statement of changes in equity will not change. The only change is an increase in the number of issued and outstanding common shares. After the share split, the equity section of the New World Corporation would appear as follows:

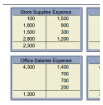
The number of common shares issued changed from 1,500 shares before the share split to 4,500 after the share split.

**Equity Section of the Balance Sheet**

The paid-in capital is not affected by a share split.

| | | |
|---|---|---|
| Contributed capital | | |
| Preferred shares, 100,000 shares authorized, 2,500 shares issued and outstanding | $85,000 | |
| Common shares, unlimited shares authorized, 4,500 shares issued; 3,900 shares outstanding | 13,000 | |
| Total contributed capital | | $98,000 |
| Retained earnings | | 480,000 |
| Total equity | | $578,000 |

The number of common shares outstanding changed from 1,300 shares before the share split to 3,900 after the share split.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Share Splits.

## 10.3 Cash Dividends

LO3 – Record and disclose cash dividends.

Both creditors and shareholders are interested in the amount of assets that can be distributed as dividends. Dividends The paid-in share capital is not available for distribution as dividends. This helps protect creditors by preventing shareholders from withdrawing assets as dividends to the point where remaining assets become insufficient to pay creditors. For example, assume total assets are $40,000; total liabilities $39,000; and total equity $1,000, consisting of $900 in common shares and $100 of retained earnings. The maximum dividends that could be declared in this situation is $100, the balance in retained earnings.

## Dividend Policy

Sometimes the board of directors may choose not to declare any dividends. There may be financial conditions in the corporation that make the payment impractical.

- **Consideration 1: There may not be adequate cash**

Corporations regularly reinvest their earnings in assets in order to make more profits. In this way, growth occurs and reliance on creditor financing can be minimized. As a result, there may not be enough cash on hand to declare and pay a cash dividend. The assets of the corporation may be tied up in property, plant, and equipment, for instance.

- **Consideration 2: A policy of the corporation may preclude dividend payments**

Some corporations pay no dividends. Instead, they reinvest their earnings in the business. Shareholders generally benefit through increased earnings, reflected in increased market price for the corporation's shares. A stated policy to this effect can apprise investors. This type of dividend policy is often found in growth-oriented corporations.

- **Consideration 3: No legal requirement that dividends have to be paid**

The board of directors may decide that no dividends should be paid. Legally, there is no requirement to do so. If shareholders are dissatisfied, they can elect a new board of directors or sell their shares.

- **Consideration 4: Dividends may be issued in shares of the corporation rather than in cash**

*Share dividends* may be issued to conserve cash or to increase the number of shares to be traded on the stock market. Shares dividends are discussed in Section 10.4.

## Dividend Declaration

Dividends can be paid only if they have been officially declared by the board of directors. The board must pass a formal resolution authorizing the dividend payment. Notices of the dividend are then published. Once a dividend declaration has been made public, the dividend becomes a liability and must be paid. An example of a dividend notice is shown in Figure 10.3.

New World Corporation
Dividend Notice

On May 25, 2023 the board of directors of New World Corporation declared a dividend of $0.50 per share on common shares outstanding (3,900). The dividend will be paid on June 26, 2023 to shareholders of record on June 7, 2023.

By order of the board

[signed]
Lee Smith
Secretary
May 25, 2023

**Figure 10.3: An Example of a Dividend Notice**

There are three dates associated with a dividend. Usually dividends are declared on one date, the **date of declaration** (May 25, 2023 in this case); they are payable to shareholders on a second date, the date of record (June 7, 2023); and the dividend is paid on a third date, the **date of payment** (June 26, 2023).

## Date of Declaration

The dividend declaration provides an official notice of the dividend. It specifies the amount of the dividend as well as which shareholders will receive the dividend. The liability for the dividend is recorded in the books of the corporation at its declaration date.

The following entry would be made in the general ledger of New World Corporation on May 25, 2023, the date of declaration:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| May 25 | Cash Dividends Declared . . . . . | | 1,950 | |
| | Dividends Payable . . . . . | | | 1,950 |
| | To record $0.50 per common share cash dividend declared; 3,900 shares x $0.50/share = $1,950. | | | |

*OR*

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| May 25 | Retained Earnings . . . . . | | 1,950 | |
| | Dividends Payable . . . . . | | | 1,950 |
| | To record $0.50 per common share cash dividend declared; 3,900 shares x $0.50/share = $1,950. | | | |

If, as shown in the second entry above, retained earnings is debited instead of cash dividends declared, a closing entry is not required for dividends during the closing process.

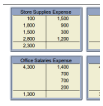
## Date of Record

Shareholders who own shares on the date of record will receive the dividend even if they have sold the shares before the dividend is actually paid. No journal entry is made in the accounting records for the date of record.

## Date of Payment

The dividend is paid on this date and recorded as:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Dividends Payable . . . . . | | 1,950 | |
| | Cash . . . . . | | | 1,950 |
| | To record payment of dividend. | | | |



An exploration is available on the Lyryx site. Log into your Lyryx course to run Dividends.

## Preferred Shareholder Dividends

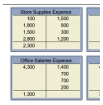
Preferred shares are offered to attract investors who have lower tolerance for risk than do common shareholders. Preferred shareholders are content with a smaller but more predictable share of a corporation's profits. For instance, preferred shareholders are entitled to dividends before any dividends are distributed to common shareholders. Also, most preferred shares specifically state what amount of dividends their holders can expect each year. For example, owners of $8 preferred shares would be paid $8 per share held each year. These dividends are often paid even if the corporation experiences a net loss in a particular year.

Preferred shares may also have other dividend preferences, depending on what rights have been attached to preferred shares at the date of incorporation. One such preference is the accumulation of undeclared dividends from one year to the next — referred to as *cumulative dividends*. Discussion of other preferences is beyond the scope of this introductory textbook. Cumulative dividends are discussed in the next section.

### Cumulative Dividend Preferences

**Cumulative preferred shares** require that any unpaid dividends accumulate from one year to the next and are payable from future earnings when a dividend is eventually declared by a corporation. These accumulated dividends must be paid before any dividends are paid on common shares. The unpaid dividends are called **dividends in arrears**. Dividends in arrears are not recorded as a liability on the balance sheet of the company until they have been declared by the board of directors. However, disclosure of dividends in arrears must be made in a note to the financial statements.

If a preferred share is **non-cumulative**, a dividend not declared by the board of directors in any one year is never paid to shareholders.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Allocating Dividends.

## 10.4 Share Dividends

LO4 – Record and disclose share dividends.

A **share dividend** is a dividend given to shareholders in the form of shares rather than cash. In this way, the declaring corporation is able to retain cash in the business and reduce the need to finance its activities through borrowing. Like a cash dividend, a share dividend reduces retained earnings. However, a share dividend does not cause assets to change. Instead, it simply transfers an amount from retained earnings to contributed capital. Total assets, total liabilities, and total equity remain unchanged when there is a share dividend. Like a cash dividend, there are three dates regarding a share dividend: date of declaration, date of record, and date of distribution. Notice that there is no 'date of payment' as there was for a cash dividend. This is because there is no cash payment involved for a share dividend. Instead, shares are distributed, or given, to the shareholders.

## Accounting for Share Dividends

To demonstrate a share dividend, assume that the Sherbrooke Corporation declares a 10% share dividend to common shareholders. The share dividend is declared on December 15, 2023 payable to shareholders of record on December 20, 2023. The share dividend is distributed on January 10, 2024. At the time of the dividend declaration, the shares were trading on the stock exchange at $4 per share and the equity of the corporation consisted of the following:

| | |
|---|---|
| Common shares; 20,000 shares authorized; | |
| 5,000 shares issued and outstanding . . . . | $25,000 |
| Retained earnings . . . . . | 100,000 |
| Total equity . . . . . | $125,000 |

The 10% share dividend equals 500 shares (calculated as 5,000 outstanding shares x 10% share dividend). The market price on the date of declaration is used to record a share dividend. On the declaration date, the journal entry to record the share dividend is:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Dec 15 | Share Dividends Declared . . . . . | | 2,000 | |
| | Common Share Dividends Distributable . . . . . | | | 2,000 |
| | To record declaration of share dividend; 5,000 shares x 10% = 500 shares; 500 shares x $4 = $2,000. | | | |

*OR*

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Dec 15 | Retained Earnings . . . . . | | 2,000 | |
| | Common Share Dividends Distributable . . . . . | | | 2,000 |
| | To record declaration of share dividend; 5,000 shares x 10% = 500 shares; 500 shares x $4 = $2,000. | | | |

If, as shown in the second entry above, retained earnings is debited instead of share dividends, a closing entry is not required for dividends during the closing process. Common Share Dividends Distributable is an equity account, specifically, a share capital account.

On the share dividend distribution date, the following entry is recorded:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jan 10 | Common Share Dividends Distributable . . | | 2,000 | |
| | Common Shares . . . . . | | | 2,000 |
| | To record distribution of share dividend. | | | |

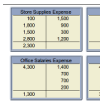
The effect of these entries is to transfer $2,000 from retained earnings to share capital. No assets are paid by the corporation when the additional shares are issued as a share dividend, and therefore the total equity remains unchanged.

### Is There Any Change in the Investor's Percentage of Corporate Ownership Because of a Share Dividend?

Since a share dividend is issued to all shareholders of a particular class, as a result of a share dividend, each shareholder has a larger number of shares. However, ownership percentage of the company remains the same for each shareholder, as illustrated below, for the four shareholders of Sherbrooke Corporation.

Each shareholder has received a 10% share dividend but their ownership percentage of the company remains constant. Since total equity does not change when there is a share dividend, the proportion owned by each shareholder does not change.

| | *Corporate ownership* | | | |
|---|---|---|---|---|
| | *Before share dividend* | | *After share dividend* | |
| Shareholder | Shares | Percent | Shares | Percent |
| 1 | 1,000 | 20% | 1,100 | 20% |
| 2 | 500 | 10% | 550 | 10% |
| 3 | 2,000 | 40% | 2,200 | 40% |
| 4 | 1,500 | 30% | 1,650 | 30% |
| | 5,000 | 100% | 5,500 | 100% |



An exploration is available on the Lyryx site. Log into your Lyryx course to run Share Dividends.

## 10.5 Book Value

LO5 – Calculate and explain the book value per share ratio.

The **book value** of a share is the amount of net assets represented by one share. When referring to common shares, book value represents the amount of net assets not claimed by creditors and preferred shareholders. When referring to preferred

shares, book value represents the amount that preferred shareholders would receive if the corporation were liquidated.

Book value per preferred share =

$$\frac{\text{Paid-in capital for preferred shares plus dividends in arrears}}{\text{Number of preferred shares outstanding}}$$

Book value per common share =

$$\frac{\text{Total equity less (paid-in capital for preferred shares plus dividends in arrears)}}{\text{Number of common shares outstanding}}$$

## Calculation of the Book Value of Shares

The calculation of the book value of preferred and common shares can be illustrated by using the following data:

**Equity Section of the Balance Sheet**

| | | |
|---|---|---|
| Contributed capital | | |
| Preferred shares; 5,000 shares authorized; 1,000 shares issued and outstanding . . | $10,000 | |
| Common shares; 200,000 shares authorized; 60,000 shares issued and outstanding . . | 20,000 | |
| Total contributed capital . . . . . | | $30,000 |
| Retained earnings . . . . . | | 105,000 |
| Total equity . . . . . | | $135,000 |

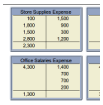
Book value is calculated as:

| *Preferred shares* | | *Common shares* | |
|---|---|---|---|
| Dividends in arrears | $ 5,000 | Total equity | $135,000 |
| *Plus:* Paid-in capital | 10,000 | *Less:* Preferred claims | 15,000 |
| Balance | $15,000 | Balance | $120,000 |
| Shares outstanding | 1,000 | Shares outstanding | 60,000 |
| Book value per share | $15 | Book value per share | $2 |

Comparison of book value with market value provides insight into investors' evaluations of the corporation. For instance, if the book value of one common share of Corporation A is $20 and its common shares are traded on a public stock exchange for $40 per share (market value), it is said to be trading for "two times book value." If Corporation B is trading for three times book value, investors are indicating that the future profit prospects for corporation B are higher than those

for Corporation A. They are willing to pay proportionately more for shares of Corporation B than Corporation A, relative to the underlying book values.

Some shares regularly sell for less than their book value on various stock exchanges. This does not necessarily mean they are a bargain investment. The market price of a share is related to such factors as general economic outlook and perceived potential of the company to generate earnings.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Book Value per Share.

## 10.6 Appendix A: Reporting for Multiple Classes of Shares

Multiple classes of shares are to be separately reported in the financial statements. For example, in Section 10.5 the equity portion of the balance sheet has separated the preferred shares and common shares. This provides important information about the composition of the company's share capital for its shareholders and creditors. Recall that preferred shares are entitled to receive dividends before common shareholders.

Another statement affected by multiple classes of shares is the statement of changes in equity, where multiple classes of shares are to be separately reported, as shown below using some sample data:

Sample Company Ltd.
Statement of Changes in Equity
For the year ended December 31, 2023

| | Preferred Shares | Common Shares | Retained Earnings | Total Equity |
|---|---|---|---|---|
| Jan 1, 2023, opening balance | $ 5,000 | $ 15,000 | $ 80,000 | $100,000 |
| Additional shares issued | 5,000 | 5,000 | | 10,000 |
| Dividends declared | | | (12,000) | (12,000) |
| Net income | | | 20,000 | 20,000 |
| Dec 31, 2023, closing balance | $ 10,000 | $ 20,000 | $ 88,000 | $118,000 |

## Summary of Chapter 10 Learning Objectives

### LO1 – Identify and explain characteristics of the corporate form of organization and classes of shares.

A corporation is a legal entity that is separate from its owners, known as shareholders. The board of directors is responsible for corporate policy and broad direction of the corporation, including hiring the person in charge of day-to-day operations. A corporation has an indefinite life, its shareholders have limited liability, it can acquire capital more easily than a sole proprietorship or partnership, and it pays income taxes on its earnings since it is a separate legal entity. A corporation can issue common and preferred shares. Common shares have voting rights while preferred shares do not. Preferred shares are listed before common shares in the equity section of the balance sheet. Preferred shareholders are entitled to receive dividends before common shareholders. Authorized shares are the total number of shares that can be issued or sold. Shares that have been issued can be repurchased by the corporation and either held in treasury for subsequent sale/distribution or cancelled. Outstanding shares are those that have been issued and are held by shareholders. Shares repurchased by a corporation are not outstanding shares.

### LO2 – Record and disclose preferred and common share transactions including share splits.

Common and preferred shares can be issued for cash or other assets. Organization costs are expensed when incurred and organizers sometimes accept shares in lieu of cash for their work in organizing the corporation. When more than one type of share has been issued, the equity section of the balance sheet must be classified by including a Contributed Capital section. When a corporations shares are selling at a high price, a share split may be declared to increase the marketability of the shares. There is no journal entry for a share split. Instead, a memorandum entry is entered into the records detailing the split. A share split increases the number of shares but does not change any of the dollar amounts on the financial statements.

### LO3 – Record and disclose cash dividends.

Cash dividends are a distribution of earnings to the shareholders and are declared by the board of directors. On the declaration date, cash dividends declared (or retained earnings) is debited and dividends payable is credited. On the date of record, no journal entry is recorded. Shareholders who hold shares on the date of record are eligible to receive the declared dividend. On the date of payment, dividends payable is debited and cash is credited. Preferred shares may have a feature known as cumulative or non-cumulative. Cumulative preferred shares accumulate undeclared dividends from one year to the next. These unpaid dividends are called dividends in arrears. When dividends are subsequently declared, dividends in arrears must be paid before anything is paid to the other shareholders. Non-cumulative preferred shares do not accumulate undeclared dividends.

### LO4 – Record and disclose share dividends.

Share dividends distribute additional shares to shareholders and are declared by the board of directors. On the declaration date, share dividends declared (or retained earnings) is debited and common share dividends distributable, a share capital account, is credited. When the share dividend is distributed to shareholders, the Common Share Dividends Distributable account is debited and common shares is credited. Share dividends cause an increase in the number of shares issued and outstanding but do not affect account balances. Share dividends simply transfer an amount from retained earnings to share capital within the equity section of the balance sheet.

### LO5 – Calculate and explain the book value per share ratio.

The book value of a share is the amount of net assets represented by one share. Book value per common share is the amount of net assets not claimed by creditors and preferred shareholders. Preferred book value per share is the net assets that preferred shareholders would receive if the corporation were liquidated.

## Discussion Questions

1. What are some advantages of the corporate form of organization?
2. What is meant by *limited liability* of a corporation?
3. What rights are attached to common shares? Where are these rights indicated?
4. What is a board of directors and whom does it represent? Are the directors involved in the daily management of the entity?
5. Describe:
    **a.** two main classes of shares that can be issued by a corporation; and
    **b.** the different terms relating to the status of a corporation's shares.
6. In what ways can shares be "preferred"? In which ways are they similar to common shares? Different from common shares?
7. Why do corporations sometimes opt for a share split?
8. Identify the major components of the equity section of a balance sheet. Why are these components distinguished?
9. How can retained earnings be said to be reinvested in a corporation?

10. What are the main issues a board of directors considers when making a dividend declaration decision?
11. Even if a corporation is making a substantial net income each year, why might the board of directors decide to not pay any cash dividends?
12. Distinguish among the date of dividend declaration, the date of record, and the date of payment.
13. What is the difference in accounting between cash dividends and share dividends?
14. Explain the different dividend preferences that may be attached to preferred shares. Why would preferred shares have these preferences over common shares? Does it mean that purchasing preferred shares is better than purchasing common shares?
15. What are dividends in arrears? Are they a liability of the corporation?
16. How does a share dividend differ from a share split?
17. Does a share dividend change an investor's percentage of corporate ownership? Explain, using an example.

## Exercises

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**EXERCISE 10–1 (LO1,2)** Watch video

Bagan Corporation, a profitable growth company with 200,000 shares of common shares outstanding, is in need of $40 million in new funds to finance a required expansion. Management has three options:

(1) Sell $40 million of 12% bonds at face value.

(2) Sell preferred shares: 400,000, $10 shares at $100 per share.

(3) Sell an additional 200,000 common shares at $200 per share.

Operating income (before interest and income taxes) upon completion of the expansion is expected to average $12 million per year; assume an income tax rate of 50 per cent.

**Required**:

**a.** Complete the schedule below.

| | *12% Bonds* | *Preferred Shares* | *Common Shares* |
|---|---|---|---|
| Income before interest and income taxes | | | |
| *Less*: Interest expense | | | |
| Income before taxes | | | |
| *Less*: Income taxes at 50% | | | |
| Net income | | | |
| *Less*: Preferred dividends | | | |
| Net income available to common shareholders | | | |
| Number of common shares outstanding | | | |
| Earnings per common share | | | |

**b.** Which financing option is most advantageous to the common shareholders? Why?

---

**EXERCISE 10–2 (LO2)**

A tract of land valued at $50,000 has been given to a corporation in exchange for 1,000 preferred shares.

**Required**:

**a.** Prepare the journal entry to record the transaction.

**b.** Where would the transaction be classified in the balance sheet?

---

**EXERCISE 10–3 (LO1,2)**

The equity section of Gannon Oilfield Corporation's balance sheet at December 31, 2023 is shown below.

| | |
|---|---|
| Preferred Shares | |
| Authorized – 100 shares | |
| Issued and Outstanding – 64 Shares | $3,456 |
| Common Shares | |
| Authorized – 2,000 Shares | |
| Issued and Outstanding – 800 Shares | 1680 |
| Retained Earnings | 600 |

**Required**:

**a.** What is the average price received for each issued preferred share?

**b.** What is the average price received for each issued common share?

**c.** What is the total contributed capital of the company?

---

**EXERCISE 10–4 (LO3)**

Strada Controls Inc. has 100,000 common shares outstanding on January 1, 2023. On May 25, 2023, the board of directors declared a semi-annual cash dividend of $1 per share. The dividend will be paid on June 26, 2023 to shareholders of record on June 7, 2023.

**Required**: Prepare journal entries for

**a.** The declaration of the dividend.

**b.** The payment of the dividend.

---

**EXERCISE 10–5 (LO1,3)** **Watch video**

Landers Flynn Inc. has 1,000, $5 cumulative preferred shares outstanding. Dividends were not paid last year. The corporation also has 5,000 common shares outstanding. Landers Flynn declared a $14,000 cash dividend to be paid in the current year.

**Required**:

**a.** Calculate the dividends received by the preferred and common shareholders

**b.** If the preferred shares were non-cumulative, how would your answers to part (a) above change?

---

**EXERCISE 10–6 (LO1,3)**

The following note appeared on the balance sheet of Sabre Rigging Limited:

> As of December 31, 2023, dividends on the 1,000 issued and outstanding shares of cumulative preferred shares were in arrears for three years at the rate of $5 per share per year or $15,000 in total.

**Required**:

**a.** Does the $15,000 of dividends in arrears appear as a liability on the December 31, 2023 balance sheet? Explain your answer.

**b.** Why might the dividends be in arrears?

**c.** The comptroller of Sabre Rigging projects net income for the 2024 fiscal year of $35,000. When the company last paid dividends, the directors allocated 50 per cent of current year's net income for dividends. If dividends on preferred shares are declared at the end of 2024 and the established policy of 50 per cent is continued, how much will be available for dividends to the common shareholders if the profit projection is realized?

---

**EXERCISE 10–7 (LO1,2,3,4)**

The December 31, 2022 balance sheet for Arrow Streaming Corporation shows that as of that date it issued a total of 10,000 common shares for $140,000. On April 1, 2023 Arrow Streaming declared a 10 per cent share dividend, payable on April 15 to shareholders of record on April 10. The market value of Arrow's shares on April 1 was $15. On June 1, the company declared a $2 cash dividend per share to common shareholders of record on June 10, and paid the dividend on June 30. Assume the year end of the corporation is December 31.

**Required**: Prepare journal entries for the above transactions, including closing entries.

---

**EXERCISE 10–8 (LO2,5)**

The equity section of Pembina Valley Manufacturing Limited's balance sheet at December 31, 2023 is shown below.

| | |
|---|---|
| Share Capital | |
| Preferred Shares, Cumulative | |
| Authorized – 500 shares | |
| Issued and Outstanding – 300 Shares | $300 |
| Common Shares | |
| Authorized – 100 Shares | |
| Issued and Outstanding – 20 Shares | 500 |
| Total Contributed Capital | 800 |
| Retained Earnings | 192 |
| Total Equity | $992 |

*Note*: There were $30 of dividends in arrears on the preferred shares at December 31, 2023.

**Required**:

**a.** Calculate the December 31, 2023 book value per share of

i. the preferred shares; and

ii. the common shares.

**b.** Assume that the common shares were split 2 for 1 on January 2, 2024 and that there was no change in any other account at that time. Calculate the new book value of common shares immediately following the share split.

---

**EXERCISE 10–9 (LO2)**

Essential Financial Service Corp. was incorporated on January 1, 2023 to prepare business plans for small enterprises seeking bank financing.

**Required**: Prepare journal entries to record the following transactions on January 2, 2023:

**a.** Received an incorporation charter authorizing the issuance of an unlimited number of no par-value common shares and 10,000, 4% preferred shares.

**b.** Issued in exchange for incorporation costs incurred by shareholders 10,000 common shares at $1.

**c.** Issued for cash 1,000 preferred shares at $3 each.

---

**EXERCISE 10–10 (LO4)**

The shareholders' equity section of Lakeview Homes Corporation's statement of financial position at December 31, 2023 is reproduced below:

| *Shareholders' Equity* | |
|---|---|
| Common shares | |
| Authorized unlimited shares, issued 5,000 shares | $ 20,000 |
| Retained earnings | 100,000 |
| Total shareholders' equity | $120,000 |

On January 15, 2023, Lakeview Homes declared a 10 per cent share dividend to holders of common shares. At this date, the common shares of the corporation were trading on the stock exchange at $10 each. The share dividend was issued February 15, 2023.

**Required**: Prepare the journal entries to record the share dividend.

---

**EXERCISE 10–11 (LO2,3,4)**

Blitz Power Tongs Inc. received a charter that authorized it to issue an unlimited number of common shares. The following transactions were completed during 2023:

| | |
|---|---|
| Jan 5 | Issued 10 common shares for a total of $150 cash. |
| Jan 12 | Exchanged 50 shares of common shares for assets listed at their fair values: machinery – $100; building – $100; land – $50. |
| Feb 28 | Declared a 10% share dividend. Market value is $7 per share. Net income to date is $60. |
| Mar 15 | Issued the share dividend. |
| Dec 31 | Closed the 2023 net income of $200 from the Income Summary account in the general ledger to the Retained Earnings account. |
| Dec 31 | Declared a $1 per share cash dividend. |

**Required**:

**a.** Prepare journal entries for the 2023 transactions, including closing entries.

**b.** Prepare the shareholders' equity section of the statement of financial position at:

i. January 31, 2023
ii. February 28, 2023
iii. December 31, 2023

---

**EXERCISE 10–12 (LO1)**

The board of directors of Oolong Ltd. is planning to expand its manufacturing facilities. To raise the $1.5 million capital needed, the following financing methods are being considered:

i. Sell $1.5 million of 10% bonds at face value.
ii. Sell $10 preferred shares: 15,000 shares at $100 a share (no other preferred shares are outstanding).
iii. Sell another 30,000 shares of common shares at $50 a share (currently 20,000 common shares are outstanding).

Income before interest and income taxes is expected to average $750,000 per year following the expansion; the income tax rate is 30%.

**Required**:

**a.** Calculate the earnings per common share for each alternative.

**b.** Which financing method will the shareholders most likely prefer and why?

**EXERCISE 10–13 (LO2,3)**

At December 31, 2022, the shareholders' equity section of the statement of financial position for Belfast Steel Ltd. totalled $30,000,000. Following are the balances of various general ledger accounts at that date.

| | | |
|---|---|---|
| Preferred shares, $1.00, cumulative | Issued 100,000 shares | $ 1,000,000 |
| Common shares | Issued 1,250,000 shares | 25,000,000 |
| Retained earnings | | 4,000,000 |

The following transactions occurred during 2023:

| | |
|---|---|
| Feb 20 | A cash dividend of $0.50 per preferred share was declared, payable Mar 1 to shareholders of record on Feb 25. |
| Mar 1 | Payment of previously declared dividend on preferred shares was made. |
| Apr 15 | A cash dividend on common shares of $0.60 per share was declared, payable Jun 10 to shareholders of record on May 1. |
| Jun 10 | Payment of the previously-declared dividend on common shares was made. |
| Aug 1 | 10,000 common shares were issued for $250,000 cash. |
| Dec 31 | A cash dividend totalling $425,000 was declared and paid. |

**Required**:

**a.** Prepare journal entries for the 2023 transactions. Separate the dividends for preferred and common shares into the two classes of shares.

**b.** Prepare the statement of changes in equity for the year ended December 31, 2023 assuming net income for the year amounted to $500,000.

**EXERCISE 10–14 (LO2,3)**

Bray Co. was authorized to issue 10,000 $2.00 preferred shares and unlimited common shares. December 31 is Bray's year-end. During 2023, its first year of operations, the following selected transactions occurred:

i. January 15: Issued 32,000 common shares to the corporation's organizers in exchange for services to get the company operational. Their efforts are estimated to be worth $15,000.

ii. February 20: 15,000 common shares were issued for cash of $6 per share.

iii. March 7: 4,500 preferred shares were issued for cash totalling $90,000.

iv. April 9: 60,000 common shares were issued in exchange for land and building with appraised values of $300,000 and $120,000 respectively.

v. May 1: 3,500 of the preferred shares were issued for a cash price of $18.00 per share.

vi. May 15: Declared and paid dividends to the shareholders of record May 18. Total cash paid dividends was $50,000.

vii. Junuary 5: 16,000 of the common shares were issued for a cash total of $112,000.

viii. July 15: 2,000 preferred shares and 20,000 common shares were issued for a cash price of $17.50 and $7.50 respectively.

ix. December 31: The company closed all its temporary accounts. The Income Summary account showed a debit balance of $25,000.

**Required**:

**a.** Prepare journal entries for each of the items above during Bray's first year of operations.

**b.** Prepare the equity section of the balance sheet in good form with all disclosures and subtotals, for the year ended December 31, 2023.

---

**EXERCISE 10–15 (LO2,3)**

The partial balance sheet for the Carman Corp. reported the following components of equity on December 31, 2022:

**Carman Corp.**
**Equity Section of the Balance Sheet**
**December 31, 2022**

| | |
|---|---|
| Contributed capital: | |
| Preferred shares, $1.50 cumulative, 20,000 shares authorized; | |
| 10,000 shares issued and outstanding | $150,000 |
| Common shares, unlimited shares authorized; | |
| 25,000 shares issued and outstanding. | 250,000 |
| Total contributed capital | $400,000 |
| Retained earnings | 250,000 |
| Total equity | $650,000 |

In 2023, Carman Corp. had the following transactions affecting the various equity accounts:

| | |
|---|---|
| Jan 4 | Sold 15,000 common shares at $11 per share. |
| Jan 8 | The directors declared a total cash dividend of $57,500 payable on Jan. 31 to the Jan. 21 shareholders of record. Dividends had not been declared for 2021 and 2022. All of the preferred shares had been issued during 2021. |
| Jan 31 | Paid the dividends declared on January 8. |
| July 1 | Sold preferred shares for a total of $77,500. The average issue price was $15.50 per share. |
| Aug 7 | The directors declared a $1.00 dividend per common share cash dividend payable on Aug. 31 to the Aug. 20 shareholders of record. |
| Aug 31 | Paid the dividends declared on Aug 7. |

**Required**:

**a.** Prepare journal entries to record the transactions for 2023.

**b.** Prepare a statement of changes in equity for the year ended December 31, 2023. For purposes of preparing this statement, assume that the retained earnings balance at December 31, 2023 was $102,500.

**c.** Prepare the equity section of the company's balance sheet as at December 31, 2023 in good form with all required disclosures and subtotals.

**d.** Calculate the book value per preferred share and per common share as at December 31, 2022 and December 31, 2023. Round final answer to nearest two decimal places.

## Problems

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**PROBLEM 10–1 (LO2)**

Following is the equity section of Critter Contracting Inc. shown before and after the board of directors authorized a 5 for 1 share split on April 15, 2023.

| **Before split** | | **After split** | |
|---|---|---|---|
| *Equity* | | *Equity* | |
| Common Shares | | Common Shares | |
| Authorized – 5,000 Shares | | Authorized – ? Shares | |
| Issued and Outstanding | | Issued and Outstanding | |
| – 1,000 Shares | $100,000 | – ? Shares | $ ? |

**Required**:

1. Complete the equity section of the balance sheet after the split.
2. Record a memorandum indicating the new number of shares.
3. If the market value per share was $40 before the split, what would be the market value after the split? Why?

---

**PROBLEM 10–2 (LO3,4)**

The equity section of TWR Contracting Inc.'s December 31, 2022 balance sheet showed the following:

| *Equity* | |
|---|---|
| *Share Capital* | |
| Preferred Shares, $0.60, Cumulative, | |
| Issued and Outstanding – 40 Shares | $ 400 |
| Common Shares, | |
| Issued and Outstanding – 2,000 Shares | 2,000 |
| Total Contributed Capital | 2,400 |
| *Retained Earnings* | 900 |
| Total Equity | $3,300 |

The following transactions occurred during 2023:

| | |
|---|---|
| Feb. 15 | Declared the regular $0.30 per share semi-annual dividend on its preferred shares and a $0.05 per share dividend on the common shares to holders of record March 5, payable April 1. |
| Apr. 1 | Paid the dividends declared on February 15. |
| May 1 | Declared a 10 per cent share dividend to common shareholders of record May 15 to be issued June 15, 2023. The market value of the common shares at May 1 was $2 per share. |
| June 15 | Distributed the dividends declared on May 1. |
| Aug. 15 | Declared the regular semi-annual dividend on preferred shares and a dividend of $0.05 on the common shares to holders of record August 31, payable October 1. |
| Oct. 1 | Paid the dividends declared on August 15. |
| Dec. 15 | Declared a 10 per cent share dividend to common shareholders of record December 20 to be issued on December 27, 2023. The market value of the common shares at December 15 was $3 per share. |
| Dec. 27 | Distributed the dividends declared on December 15. |
| Dec. 31 | Net income for the year ended December 31, 2023 was $1,400. |

**Required**:

1. Prepare journal entries to record the 2023 transactions, including closing entries for the December 31 year end date. Show calculations. Descriptive narrative is not needed.
2. Prepare the statement of changes in equity for the year ended December 31, 2023.

---

**PROBLEM 10–3 (LO1,2,3,4)** **Watch video**

The equity section of Wondra Inc.'s December 31, 2022 balance sheet showed the following:

| | |
|---|---|
| Contributed Capital | |
| Preferred Shares; $0.50 cumulative; unlimited shares authorized; 30,000 shares issued and outstanding | $ 480,000 |
| Common Shares; unlimited shares authorized; 70,000 shares issued and outstanding | 560,000 |
| Total contributed capital | $1,040,000 |
| Retained Earnings | 95,000 |
| Total Equity | $1,135,000 |

At December 31, 2022 there were $15,000 of dividends in arrears.

The following transactions occurred during 2023:

| | |
|---|---|
| Feb. 10 | Declared a total dividend of $32,000 to shareholders of record on February 15, payable March 1. |
| Mar. 1 | Paid dividends declared February 10. |
| 5 | Issued for cash 2,000 preferred shares at $18 each. |
| Apr. 15 | The Board of Directors declared a 2:1 split on the preferred and common shares. |
| Jun. 22 | Issued for cash 20,000 common shares at $4.00 per share. |
| Nov. 10 | Declared a 20% share dividend to common shareholders of record on Nov. 14, distributable Dec. 15. The market price of the shares on Nov. 10 was $3.50. |
| Dec. 15 | Distributed share dividend declared on November 10. |
| Dec. 31 | Closed the Income Summary account which had a credit balance of $290,000. |
| 31 | Closed the dividend accounts. |

**Required**:

1. Journalize the 2023 transactions.
2. Prepare the equity section of the December 31, 2023 balance sheet.

---

**PROBLEM 10–4 (LO1,2,5)**

The following is the equity section of the balance sheet of Tridon Construction Limited at December 31, 2023.

| *Equity* | |
|---|---|
| *Share Capital* | |
| Common Shares | |
| Authorized – 500 shares | |
| Issued and Outstanding – 300 Shares | $3,070 |
| *Retained Earnings* | 500 |
| Total Equity | $3,570 |

**Required**:

1. What is the paid-in capital per common share? ...the book value per common share? Round calculations to two decimal places.

2. On December 31, the Tridon Construction common shares traded at $24. Why is the market value different from the book value of commons shares?

# Chapter 11

# The Statement of Cash Flows

Details about the amount of cash received and paid out during an accounting period are not shown on the balance sheet, income statement, or statement of changes in equity. This information is disclosed on the statement of cash flows (SCF). This chapter discusses the purpose of the statement of cash flows, the steps in preparing the SCF, as well as how to interpret various sections of the statement of cash flows.

## Chapter 11 Learning Objectives

LO1 – Explain the purpose of the statement of cash flows.

LO2 – Prepare a statement of cash flows.

LO3 – Interpret a statement of cash flows.

## Concept Self-Check

Use the following as a self-check while working through Chapter 11.

1. What is the definition of cash and cash equivalents?
2. Why is a statement of cash flows prepared?
3. What are the three sections of a statement of cash flows?
4. What two methods can be used to prepare the operating activities section of the statement of cash flows?
5. Why is depreciation expense an adjustment in the operating activities section of the statement of cash flows?
6. Where are dividend payments listed on the statement of cash flows?
7. In what section of the statement of cash flows are the cash proceeds resulting from the sale of a non-current asset listed?
8. Where on the statement of cash flows is a long-term bank loan payment identified?

**NOTE:** The purpose of these questions is to prepare you for the concepts introduced in the chapter. Your goal should be to answer each of these questions as you read through the chapter. If, when you complete the chapter, you are unable to answer one or more the Concept Self-Check questions, go back through the content to find the answer(s). Solutions are not provided to these questions.

## 11.1 Financial Statement Reporting

LO1 – Explain the purpose of the statement of cash flows.

Cash flow is an important factor in determining the success or failure of a corporation. It is quite possible for a profitable business to be short of cash. As discussed in Chapter 7, a company can have liquidity issues because of large amounts of cash tied up in inventory and accounts receivable, for instance. Conversely, an unprofitable business might have sufficient cash to pay its bills if it has access to enough financing from loans or by issuing share capital.

We know that the financial activities of a corporation are reported through four financial statements: a balance sheet, an income statement, a statement of changes in equity, and a statement of cash flows (SCF). Statement of cash flowsThis chapter discusses the statement of cash flows in detail.

The SCF identifies the sources (inflows) and uses (outflows) of cash during the accounting period. It explains why the cash balance at the end of the accounting period is different from that at the beginning of the period by describing the enterprise's *financing*, *investing*, and *operating* activities.

Cash flow information is useful to management when making decisions such as purchasing equipment, plant expansion, retiring long-term debt, or declaring dividends. The SCF is useful to external users when evaluating a corporation's financial performance.

The SCF, together with the income statement, provides a somewhat limited means of assessing future cash flows because these statements are based on historical, not prospective data. Nevertheless, the ability to generate cash from past operations is often an important indication of whether the enterprise will be able to meet obligations as they become due, pay dividends, pay for recurring operating costs, or survive adverse economic conditions.

For SCF purposes, cash includes cash and cash equivalents — assets that can be quickly converted into a known amount of cash, such as short-term investments that are not subject to significant risk of changes in value. For our purposes, an investment will be considered a cash equivalent when it has a maturity of three months or less from the date of acquisition.

Because of differences in the nature of each entity and industry, management judgment is required

to determine what assets constitute cash and cash equivalents for a particular firm. This decision needs to be disclosed on the SCF or in a note to the financial statements as shown in the following example:

---

Note X
Cash and cash equivalents consist of cash on deposit and short-term investments held for the purposes of meeting cash commitments within three months from the balance sheet date. Cash and cash equivalents consist of the following:

| | ($000s) | | |
|---|---|---|---|
| | 2024 | 2023 | 2022 |
| Cash on Deposit | $20 | $30 | $50 |
| Short-term Investments | 36 | 31 | 37 |
| | $56 | $61 | $87 |

---

For simplicity, examples throughout this chapter involving cash and cash equivalents will include only cash.

Cash flows result from a wide variety of a corporation's activities as cash is received and disbursed over a period of time. Because the income statement is based on accrual accounting that matches expenses with revenues, net income most often does not reflect cash receipts and disbursements during the time period they were made. As we will see, the statement of cash flows converts accrual net income to a cash basis net income.

## 11.2 Preparing the Statement of Cash Flows

LO2 – Prepare a statement of cash flows.

The general format for a SCF is shown in Figure 11.1. The SCF details the cash inflows and outflows that caused the beginning of the period cash account balance to change to its end of period balance.

Name of Company
Statement of Cash Flows
For the Period Ended

| | | |
|---|---|---|
| *Cash flows from operating activities:* | | |
| [Each operating inflow/outflow is listed] | | |
| Net cash inflow/outflow from operating activities | $ | XX |
| *Cash flows from investing activities:* | | |
| [Each investing inflow/outflow is listed] | | |
| Net cash inflow/outflow from investing activities | | XX |
| *Cash flows from financing activities:* | | |
| [Each financing inflow/outflow is listed] | | |
| Net cash inflow/outflow from financing activities | | XX |
| Net increase/decrease in cash | $ | XX |
| Cash at beginning of period | | XX |
| Cash at end of period | $ | XX |

**Figure 11.1: General Format for a Statement of Cash Flows**

Notice that the cash flows in Figure 11.1 are separated into three groups: cash flows from operating, investing, and financing activities. Grouping or classifying cash flows is a key component of preparing a SCF.

## Classifying Cash Flows—Operating Activities

Cash flow from operating activities represents cash flows generated from the principal activities that produce revenue for a corporation, such as selling products, and the related expenses reported on the income statement. Because of accrual accounting, the net income reported on the income statement includes noncash transactions. For example, revenue earned on account is included in accrual net income but it does not involve cash (debit accounts receivable and credit revenue). Therefore, the operating activities section of the SCF must convert accrual net income to a cash basis net income. There are two generally accepted methods for preparing the operating activities section of the SCF, namely the direct method and the indirect method. This chapter illustrates the indirect method because it is more commonly used in Canada. The direct method is addressed in a different textbook. Both methods result in the same cash flows from operating activities — it is the way in which the number is calculated that differs. The method used has an impact on only the operating activities section and not on the investing or financing activities sections.

In using the indirect method for preparing the operating activities section, the accrual net income is adjusted for changes in current assets (except cash), current liabilities (except dividends payable), depreciation expense, and gains/losses on the disposition of non-current assets. Figure 11.2 illustrates the effect of these items on the SCF.

| | | |
|---|---|---|
| *Cash flows from operating activities:* | | |
| Net income/net loss | $ | XX |
| Adjustments to reconcile net income/loss to cash provided/used by operating activities: | | |
| Add: Decreases in current assets (except Cash) | | XX |
| Subtract: Increases in current assets (except Cash) | | XX |
| Add: Increases in current liabilities (except Dividends payable) | | XX |
| Subtract: Decreases in current liabilities (except Dividends payable) | | XX |
| Add: Depreciation expense | | XX |
| Add: Losses on disposal of non-current assets | | XX |
| Subtract: Gains on disposal of non-current assets | | XX |
| Net cash inflow/outflow from operating activities | $ | XX |

**Figure 11.2: Detailed Adjustments to Convert Accrual Net Income to a Cash Basis**

Decreases in current assets are added back as an adjustment to net income because, for example, a decrease in accounts receivable indicates that cash was collected from credit customers (debit cash and credit accounts receivable) yet it is not part of accrual net income, so the cash collected must be added. An increase in accounts receivable indicates that sales on account were recorded (debit accounts receivable and credit sales) so it is part of accrual net income. However, since no cash was collected, this must be subtracted from accrual net income to adjust it to a cash basis.

Increases in current liabilities are added back as an adjustment to net income because, for example, an increase in accounts payable indicates that a purchase/expense was made on account (debit expense and credit accounts payable) so it was subtracted in calculating accrual net income. However, since no cash was paid, this must be added back to accrual net income to adjust it to a cash basis. A decrease in accounts payable indicates that a payment was made to a creditor (debit accounts payable and credit cash) yet it is not part of accrual net income so the cash paid must be subtracted.

Depreciation expense is subtracted in calculating accrual net income. However, an analysis of the journal entry shows that no cash was involved (debit depreciation expense and credit accumulated depreciation), so it must be added back to adjust the accrual net income to a cash basis.

A loss on the disposal of a non-current asset is added back as an adjustment to net income because, in analyzing the journal entry when losses occur (e.g., debit cash, debit loss, credit land), the loss represents the difference between the cash proceeds and the book value of the non-current asset. Since a loss is subtracted on the income statement and does not represent a cash outflow, it is added back to adjust the accrual net income to a cash basis. The same logic applies for a gain on the disposal of a non-current asset.

## Classifying Cash Flows—Investing Activities

Cash flows from investing activities involve increases and decreases in long-term asset accounts. These include outlays for the acquisition of property, plant, and equipment, as well as proceeds from their disposal. Figure 11.3 illustrates the effect of these items on the SCF.

| | | |
|---|---|---|
| *Cash flows from investing activities:* | | |
| Cash proceeds from sale of non-current assets | XX | |
| Cash paid to purchase non-current assets | XX | |
| Net cash inflow/outflow from investing activities | | XX |

**Figure 11.3: Detail of Inflows/(Outflows) From Investing Activities**

## Classifying Cash Flows—Financing Activities

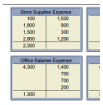
Cash flows from financing activities result when the composition of the debt and equity capital structure of the entity changes. This category is generally limited to increases and decreases in long-term liability accounts and share capital accounts such as common and preferred shares. These include cash flows from the issue and repayment of debt, and the issue and repurchase of share capital. Dividend payments are generally considered to be financing activities, since these represent a return to shareholders on the original capital they invested. Figure 11.4 illustrates the effect of these items on the SCF.

| | | |
|---|---|---|
| *Cash flows from financing activities:* | | |
| Cash proceeds from issuance of shares | XX | |
| Cash paid for repurchase of shares | XX | |
| Cash proceeds from borrowings | XX | |
| Cash repayments of borrowings | XX | |
| Cash paid for dividends | XX | |
| Net cash inflow/outflow from financing activities | | XX |

**Figure 11.4: Detail of Inflows/(Outflows) From Financing Activities**

## Classifying Cash Flows—Noncash Investing and Noncash Financing Activities

There are some transactions that involve the direct exchange of non-current balance sheet items so that cash is not affected. For example, noncash investing and noncash financing activities would include the purchase of a non-current asset by issuing debt or share capital, the declaration and issuance of a share dividend, retirement of debt by issuing shares, or the exchange of noncash assets for other noncash assets. Although noncash investing and noncash financing activities do not appear on the SCF, the full disclosure principle requires that they be disclosed either in a note to the financial statements or in a schedule on the SCF.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Cash Flow Statement Categories.

Now, let us demonstrate the preparation of a SCF using the balance sheet, income statement, and statement of changes in equity of Example Corporation shown below.

Example Corporation
Balance Sheet
At December 31
($000s)

| | *2023* | *2022* |
|---|---|---|
| *Assets* | | |
| Current assets | | |
| Cash | $ 27 | $ 150 |
| Accounts receivable | 375 | 450 |
| Merchandise inventory | 900 | 450 |
| Prepaid expenses | 20 | 10 |
| Total current assets | 1,322 | 1,060 |
| Property, plant, and equipment | | |
| Land | 70 | 70 |
| Buildings | 1,340 | 620 |
| Less: Accumulated depreciation - buildings | (430) | (280) |
| Machinery | 1,130 | 920 |
| Less: Accumulated depreciation - machinery | (250) | (240) |
| Total property, plant, and equipment | 1,860 | 1,090 |
| Total assets | $ 3,182 | $ 2,150 |
| *Liabilities* | | |
| Current liabilities | | |
| Accounts payable | $ 235 | $ 145 |
| Dividends payable | 25 | 30 |
| Income taxes payable | 40 | 25 |
| Total current liabilities | 300 | 200 |
| Long-term loan payable | 1,000 | 500 |
| Total liabilities | 1,300 | 700 |
| *Equity* | | |
| Common shares | 1,210 | 800 |
| Retained earnings | 672 | 650 |
| Total equity | 1,882 | 1,450 |
| Total liabilities and equity | $ 3,182 | $ 2,150 |

Example Corporation
Income Statement
For the Year Ended December 31, 2023
($000s)

| | | |
|---|---|---|
| Sales | | $ 1,200 |
| Cost of goods sold | | 674 |
| Gross profit | | 526 |
| Operating expenses | | |
| Selling, general, and administration | $ 115 | |
| Depreciation | 260 | 375 |
| Income from operations | | 151 |
| Other revenues and expenses | | |
| Interest expense | 26 | |
| Loss on disposal of machinery | 10 | 36 |
| Income before income taxes | | 115 |
| Income taxes | | 35 |
| Net Income | | $ 80 |

Example Corporation
Statement of Changes in Equity
For the Year Ended December 31, 2023
($000s)

| | *Share Capital* | *Retained Earnings* | *Total Equity* |
|---|---|---|---|
| Opening balance | $ 800 | $ 650 | $ 1,450 |
| Common shares issued | 410 | - | 410 |
| Net income | - | 80 | 80 |
| Dividends declared | - | (58) | (58) |
| Ending balance | $ 1,210 | $ 672 | $ 1,882 |

The SCF can be prepared from an analysis of transactions recorded in the Cash account. Accountants summarize and classify these cash flows on the SCF for the three major activities noted earlier, namely operating, investing, and financing. To aid our analysis, the following list of additional information from the records of Example Corporation will be used.

### *Additional Information*

1. A building was purchased for $720 cash.
2. Machinery was purchased for $350 cash.
3. Machinery costing $140 with accumulated depreciation of $100 was sold for $30 cash.
4. Total depreciation expense of $260 was recorded during the year; $150 on the building and $110 on the machinery.
5. Example Corporation received $500 cash from issuing a long-term loan with the bank.

6. Shares were issued for $410 cash.
7. $58 of dividends were declared during the year.

## Analysis of Cash Flows

There are different ways to analyze cash flows and then prepare the SCF; only one of those techniques will be illustrated here using the following steps.

1. Set up a cash flow table.
2. Calculate the changes in each balance sheet account.
3. Calculate and analyze the changes in retained earnings and dividends payable (if there is a Dividends Payable account).
4. Calculate and analyze the changes in the noncash current assets and current liabilities (excluding Dividends Payable account).
5. Calculate and analyze changes in non-current asset accounts
6. Calculate and analyze changes in Long-term Liability and Share Capital accounts.
7. Reconcile the analysis.
8. Prepare a statement of cash flows.

### Step 1: Set up a cash flow table

Set up a table as shown below with a row for each account shown on the balance sheet. Enter amounts for each account for 2022 and 2023. Show credit balances in parentheses. Total both columns and ensure they equal zero. The table should appear as follows after this step has been completed:

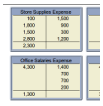
| *Account* | *Balance ($000s) 2023 Dr. (Cr.)* | *2022 Dr. (Cr.)* |
|---|---|---|
| Cash | 27 | 150 |
| Accounts receivable | 375 | 450 |
| Merchandise inventory | 900 | 450 |
| Prepaid expenses | 20 | 10 |
| Land | 70 | 70 |
| Buildings | 1,340 | 620 |
| Accum. dep.- buildings | (430) | (280) |
| Machinery | 1,130 | 920 |
| Accum. dep.- machinery | (250) | (240) |
| Accounts payable | (235) | (145) |
| Dividends payable | (25) | (30) |
| Income taxes payable | (40) | (25) |
| Long-term loan payable | (1,000) | (500) |
| Share capital | (1,210) | (800) |
| Retained earnings | (672) | (650) |
| Total | -0- | -0- |

**Step 2: Calculate the change in cash**

Add two columns to the cash flow table. Calculate the net debit or net credit change in cash and insert this change in the appropriate column. This step is shown below.

| | Balance ($000s) | | Step 2 Change | |
|---|---|---|---|---|
| *Account* | *2023 Dr. (Cr.)* | *2022 Dr. (Cr.)* | *Dr.* | *Cr.* |
| **Cash** | **27** | **150** | | **123** |
| Accounts receivable | 375 | 450 | | |
| Merchandise inventory | 900 | 450 | | |
| Prepaid expenses | 20 | 10 | | |
| Land | 70 | 70 | | |
| Buildings | 1,340 | 620 | | |
| Accum. dep. – buildings | (430) | (280) | | |
| Machinery | 1,130 | 920 | | |
| Accum. dep. – machinery | (250) | (240) | | |
| Accounts payable | (235) | (145) | | |
| Dividends payable | (25) | (30) | | |
| Income taxes payable | (40) | (25) | | |
| Long-term loan payable | (1,000) | (500) | | |
| Share capital | (1,210) | (800) | | |
| Retained earnings | (672) | (650) | | |
| Total | -0- | -0- | | |

Cash has decreased by $123k. This is the amount that the SCF analysis must reconcile to.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Cash Balance.

**Step 3: Calculate and analyze the changes in retained earnings and dividends payable (if there is a Dividends Payable account)**

When we calculate the changes for each of retained earnings and dividends payable, the net difference may not always reflect the causes for change in these accounts. For example, the net difference between the beginning and ending balances in retained earnings is an increase of $22 thousand. However, two things occurred to cause this net change: a net income of $80 thousand (a debit to income summary and a credit to retained earnings) and dividends of $58 thousand that were declared during the year per the additional information (a debit to retained earnings of $58k and a credit to dividends payable of $58k). ***The net income of $80 thousand is the starting position in the operating activities section of the SCF (see Figure 11.5).***

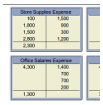
The change in the dividends payable balance was also caused by two transactions — the dividend declaration of $58 thousand (a debit to retained earnings and a credit to dividends payable) and a $63 thousand payment of dividends (a debit to dividends payable and a credit to cash).

***The $63 thousand cash payment is subtracted in the financing activities section of the SCF (see Figure 11.5).*** Dividends payable can change because of two transactions, as in this example, or because of one transaction, which could be either a dividend declaration with no payment of cash, or a payment of the dividend payable and no dividend declaration. Step 3 as it applies to Example Corporation is detailed below.

During 2023, dividends of $58k were declared (this information was given). The beginning balance of $30k plus $58k means $63k were paid, creating the ending balance of $25k (the $63k was not given so had to be calculated and results in a debit to dividends payable). The payment of $63k of dividends is a financing activity.

| | Balance ($000s) | | Step 3 Change | |
|---|---|---|---|---|
| *Account* | *2023 Dr. (Cr.)* | *2022 Dr. (Cr.)* | *Dr.* | *Cr.* |
| Cash | 27 | 150 | | 123 |
| Accounts receivable | 375 | 450 | | 75 |
| Merchandise inventory | 900 | 450 | 450 | |
| Prepaid expenses | 20 | 10 | 10 | |
| Land | 70 | 70 | | |
| Buildings | 1,340 | 620 | | |
| Accum. dep. – buildings | (430) | (280) | | |
| Machinery | 1,130 | 920 | | |
| Accum. dep. – machinery | (250) | (240) | | |
| Accounts payable | (235) | (145) | | 90 |
| **Dividends payable** | **(25)** | **(30)** | **63** | **58** |
| Income taxes payable | (40) | (25) | | 15 |
| Long-term loan payable | (1,000) | (500) | | |
| Share capital | (1,210) | (800) | | |
| **Retained earnings** | **(672)** | **(650)** | **58** | **80** |
| Total | -0- | -0- | | |

During 2023, net income of $80k was earned. The beginning balance in retained earnings of $650k plus net income of $80 means $58k of dividends were declared, creating the $672k ending retained earnings balance.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Net income/loss and Dividends Paid.

**Step 4: Calculate and analyze the changes in the noncash current assets and current liabilities (excluding Dividends Payable account)**

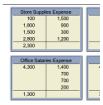
Calculate the net debit or net credit changes for each current asset and current liability account on the balance sheet and insert these changes in the appropriate column. Step 4 as it applies to Example Corporation is detailed below. ***The $75 thousand decrease in accounts receivable is added in the operating activities section of the SCF, the $450 thousand increase in merchandise inventory is subtracted, the $10 thousand increase in prepaid expenses is subtracted, the $90***

***thousand increase in accounts payable is added, and the $15 thousand increase in income taxes payable is added (see Figure 11.5).***

| | Balance ($000s) | | Step 4 Change | |
|---|---|---|---|---|
| *Account* | *2023 Dr. (Cr.)* | *2022 Dr. (Cr.)* | *Dr.* | *Cr.* |
| Cash | 27 | 150 | | 123 |
| **Accounts receivable** | **375** | **450** | | **75** |
| **Merchandise inventory** | **900** | **450** | **450** | |
| **Prepaid expenses** | **20** | **10** | **10** | |
| Land | 70 | 70 | | |
| Buildings | 1,340 | 620 | | |
| Accum. dep. – buildings | (430) | (280) | | |
| Machinery | 1,130 | 920 | | |
| Accum. dep. – machinery | (250) | (240) | | |
| **Accounts payable** | **(235)** | **(145)** | | **90** |
| Dividends payable | (25) | (30) | | |
| **Income taxes payable** | **(40)** | **(25)** | | **15** |
| Long-term loan payable | (1,000) | (500) | | |
| Share capital | (1,210) | (800) | | |
| Retained earnings | (672) | (650) | | |
| Total | -0- | -0- | | |

The net change in each of accounts receivable, merchandise inventory, and prepaid expenses are classified as operating activities.

The net change in each of accounts payable and income taxes payable are classified as operating activities.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Cash Flows from Operating Activities.

**Step 5: Calculate and analyze changes in non-current asset accounts**

Changes in non-current assets are classified as investing activities. There was no change in the Land account. We know from the additional information provided that buildings and machinery were purchased and that machinery was sold.

Buildings were purchased for $720 thousand (a debit to buildings and a credit to cash). ***The cash payment of $720 thousand is shown in the investing activities section (see Figure 11.5)***.

Accumulated depreciation–buildings is a non-current asset account and it increased by $150 thousand. This change was caused by a debit to depreciation expense and a credit to accumulated depreciation–building. We know from an earlier discussion that depreciation expense is an ad-

justment in the operating activities section of the SCF therefore ***the $150 thousand is added in the operating activities section (see Figure 11.5)***.

Two transactions caused machinery to change. First, the purchase of $350 thousand of machinery (debit machinery and credit cash); ***the $350 thousand cash payment is shown in the investing activities section (see Figure 11.5).*** Second, machinery costing $140 thousand with accumulated depreciation of $100 thousand was sold for cash of $30 thousand resulting in a loss of $10 thousand. ***The cash proceeds of $30 thousand is shown in the investing activities section of the SCF and the $10 thousand loss is added in the operating activities section (see Figure 11.5).***

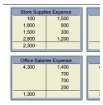
Accumulated depreciation–machinery not only decreased $100 thousand because of the sale of machinery but it increased by $110 thousand because of depreciation (debit depreciation expense and credit accumulated depreciation–machinery). ***The $110 thousand of depreciation expense is added in the operating activities section of the SCF (see Figure 11.5).***

Total depreciation expense of $260k was recorded during the year; $150k on the building and $110k on the machinery, an adjustment under operating activities on the SCF.

| | | Balance ($000s) | | Step 5 Change | |
|---|---|---|---|---|---|
| | Account | 2023 Dr. (Cr.) | 2022 Dr. (Cr.) | Dr. | Cr. |
| | Cash | 27 | 150 | | 123 |
| | Accounts receivable | 375 | 450 | | 75 |
| | Merchandise inventory | 900 | 450 | 450 | |
| | Prepaid expenses | 20 | 10 | 10 | |
| | **Land** | **70** | **70** | **-0-** | |
| | **Buildings** | **1,340** | **620** | **720** | |
| → | **Accum. dep. – buildings** | **(430)** | **(280)** | | **150** |
| | **Machinery** | **1,130** | **920** | **350** | **140** |
| → | **Accum. dep. – machinery** | **(250)** | **(240)** | **100** | **110** |
| | Accounts payable | (235) | (145) | | 90 |
| | Dividends payable | (25) | (30) | 5 | |
| | Income taxes payable | (40) | (25) | | 15 |
| | Long-term loan payable | (1,000) | (500) | | |
| | Share capital | (1,210) | (800) | | |
| | Retained earnings | (672) | (650) | | |
| | Total | -0- | -0- | | |

A building was purchased for cash of $720k, an investing activity.

Machinery costing $140k with accum. dep. of $100k was sold for cash of $30k, an investing activity.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Investing Activities.

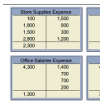
**Step 6: Calculate and analyze changes in Long-term Liability and Share Capital accounts**

Changes in Long-term Liability and Share Capital accounts result from financing activities. We know from the additional information provided earlier that Example Corporation received cash of $500k from a bank loan (debit cash and credit long-term loan payable) and issued shares for $410k cash (debit cash and credit share capital). ***The $500 thousand cash proceeds from the bank loan and $410 thousand cash proceeds from the issuance of shares are listed in the financing section of the SCF (see Figure 11.5)***.

| | | | Step 6 | |
|---|---|---|---|---|
| | *Balance ($000s)* | | *Change* | |
| *Account* | *2023 Dr. (Cr.)* | *2022 Dr. (Cr.)* | *Dr.* | *Cr.* |
| Cash | 27 | 150 | | 123 |
| Accounts receivable | 375 | 450 | | 75 |
| Merchandise inventory | 900 | 450 | 450 | |
| Prepaid expenses | 20 | 10 | 10 | |
| Land | 70 | 70 | -0- | |
| Buildings | 1,340 | 620 | 720 | |
| Accum. dep. – buildings | (430) | (280) | | 150 |
| Machinery | 1,130 | 920 | 350 | 140 |
| Accum. dep. – machinery | (250) | (240) | 100 | 110 |
| Accounts payable | (235) | (145) | | 90 |
| Dividends payable | (25) | (30) | 5 | |
| Income taxes payable | (40) | (25) | | 15 |
| **Long-term loan payable** | **(1,000)** | **(500)** | | **500** |
| **Share capital** | **(1,210)** | **(800)** | | **410** |
| Retained earnings | (672) | (650) | 58 | 80 |
| Total | -0- | -0- | | |

Shares were issued for cash of $410k, a financing activity.

$500k of cash was received because of an additional bank loan, a financing activity.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Financing Activities.

**Step 7: Reconcile the analysis**

The analysis is now complete. Add the debit and credit changes, excluding the change in cash. The total debits of $1,693 less the total credits of $1,570 equal a difference of $123 which reconciles to the decrease in cash calculated in Step 2.

| | Balance ($000s) | | Step 7 Change | |
|---|---|---|---|---|
| *Account* | *2023 Dr. (Cr.)* | *2022 Dr. (Cr.)* | *Dr.* | *Cr.* |
| **Cash** | 27 | 150 | | **123** |
| Accounts receivable | 375 | 450 | | 75 |
| Merchandise inventory | 900 | 450 | 450 | |
| Prepaid expenses | 20 | 10 | 10 | |
| Land | 70 | 70 | -0- | |
| Buildings | 1,340 | 620 | 720 | |
| Accum. dep. – buildings | (430) | (280) | | 150 |
| Machinery | 1,130 | 920 | 350 | 140 |
| Accum. dep. – machinery | (250) | (240) | 100 | 110 |
| Accounts payable | (235) | (145) | | 90 |
| Dividends payable | (25) | (30) | 5 | |
| Income taxes payable | (40) | (25) | | 15 |
| Long-term loan payable | (1,000) | (500) | | 500 |
| Share capital | (1,210) | (800) | | 410 |
| Retained earnings | (672) | (650) | 58 | 80 |
| **Total** | -0- | -0- | **1,693** | **1,570** |
| **Change in cash** | | | | **123** |

The change in cash calculated in Step 2…

…must agree to the change in cash resulting from the analysis.

The information in the completed analysis can be used to prepare the statement of cash flows shown in Figure 11.5.

Example Corporation
Statement of Cash Flows
For the Year Ended December 31, 2023
($000s)

| | | |
|---|---|---|
| *Cash flows from operating activities:* | | |
| Net income | | $ 80 |
| Adjustments to reconcile net income cash provided by operating activities: | | |
| Decrease in accounts receivable | | 75 |
| Increase in merchandise inventory | | (450) |
| Increase in prepaid expenses | | (10) |
| Increase in accounts payable | | 90 |
| Increase in income taxes payable | | 15 |
| Depreciation expense | | 260 |
| Loss on disposal of machinery | | 10 |
| Net cash inflow from operating activities | | $ 70 |
| *Cash flows from investing activities:* | | |
| Proceeds from sale of machinery | 30 | |
| Purchase of building | (720) | |
| Purchase of machinery | (350) | |
| Net cash outflow from investing activities | | (1,040) |
| *Cash flows from financing activities:* | | |
| Payment of dividends | (63) | |
| Proceeds from bank loan | 500 | |
| Issuance of shares | 410 | |
| Net cash inflow from financing activities | | 847 |
| Net decrease in cash | | $ (123) |
| Cash at beginning of year | | 150 |
| Cash at end of year | | $ 27 |

**Figure 11.5: Statement of Cash Flows for Example Corporation**

## 11.3 Interpreting the Statement of Cash Flows

LO3 – Interpret a statement of cash flows.

Readers of financial statements need to know how cash has been used by the enterprise. The SCF provides external decision makers such as creditors and investors with this information. The statement of cash flows provides information about an enterprise's financial management policies and practices. It also may aid in predicting future cash flows, which is an important piece of information for investors and creditors.

The *quality* of earnings as reported on the income statement can also be assessed with the information provided by the SCF. The measurement of net income depends on a number of accruals and allocations that may not provide clear information about the cash-generating power of a company. Users will be more confident in a company with a high correlation between cash provided by

operations and net income measured under the accrual basis. Recall, for instance, that although Example Corporation has net income of $80,000 during 2023, its net cash inflow from operations is only $70,000, chiefly due to the large increase in inventory levels. Although net cash flow from operations is still positive, this discrepancy between net income and cash flow from operations may indicate looming cash flow problems, particularly if the trend continues over time.

Example Corporation's SCF also reveals that significant net additions to plant and equipment assets occurred during the year ($1,070,000), financed in part by cash flow from operating activities but primarily by financing activities. These activities included the assumption of loans and issue of shares that amounted to $847,000, net of dividend payments ($500,000 from issuing a long-term loan plus $410,000 from issuing shares less $63,000 for payment of dividends).

It appears that a significant plant and equipment asset acquisition program may be underway, which may affect future financial performance positively. This expansion has been financed mainly by increases in long-term debt and the issuance of common shares. However, the magnitude of the plant and equipment asset purchases, coupled with the payment of the dividends to shareholders, has more than offset cash inflows from operating and financing activities, resulting in a net overall decrease in cash of $123,000. Though the current cash expenditure on long-term productive assets may be a prudent business decision, it has resulted in (hopefully temporary) adverse effects on overall cash flow.

The SCF is not a substitute for an income statement prepared on the accrual basis. Both statements should be used to evaluate a company's financial performance. Together, the SCF and income statement provide a better basis for determining the enterprise's ability to generate funds from operations and thereby meet current obligations when they fall due (liquidity), pay dividends, meet recurring operating costs, survive adverse economic conditions, or expand operations with internally-generated cash.

The SCF highlights the amount of cash available to a corporation, which is important. Excess cash on hand is unproductive. Conversely, inadequate cash decreases liquidity. Cash is the most liquid asset, and its efficient use is one of the most important tasks of management. Cash flow information, interpreted in conjunction with other financial statement analyses, is useful in assessing the effectiveness of the enterprise's cash management policies.

Readers who wish to evaluate the financial position and results of an enterprise's operations also require information on cash flows produced by investing and financing activities. The SCF is the only statement that explicitly provides this information. By examining the relationship among the various sources and uses of cash during the year, readers can also focus on the effectiveness of management's investing and financing decisions and how these may affect future financial performance.

## 11.4 Appendix A: Putting It All Together: Corporate Financial Statements

The core financial statements connect to complete an overall picture of the company's operations and its current financial state. It is important to understand how these reports connect; therefore, a review of some simplified financial statements for Wellbourn Services Ltd. is presented below.

Wellbourn Services Ltd.
Statement of Income
for the year ended December 31, 2023

| | | |
|---|---|---|
| Revenues: | | |
| Sales | $ 250,000 | |
| Services revenue | 53,000 | |
| Total revenue | | $ 303,000 |
| Operating expenses: | | |
| Cost of good sold | 100,000 | |
| Depreciation expense | 3,000 | |
| Rent expense | 20,000 | |
| Salaries expense | 65,000 | |
| Total operating expense | | 188,000 |
| Income from continuing operations before tax | | 115,000 |
| Income tax | | 34,500 |
| Net income | | $ 80,500 |
| | | |
| Earnings per share | | $ 24 |

Wellbourn Services Ltd.
Statement of Changes in Equity
for the year ended December 31, 2023

| | Common Shares | Retained Earnings | Total |
|---|---|---|---|
| Balance, January 1 | $200,000 | $75,000 | $275,000 |
| Net income | | 80,500 | 80,500 |
| Issuance of common shares | 10,000 | | 10,000 |
| Dividends declared | | (50,000) | (50,000) |
| Balance, December 31 | $210,000 | $105,500 | $315,500 |

Wellbourn Services Ltd.
Statement of Financial Position
December 31, 2023

| | | | |
|---|---|---|---|
| Assets | | Liabilities | |
| Current assets | | Current liabilities | |
| Cash | $135,500 | Accounts payable | $ 77,500 |
| Accounts receivable (net) | 225,000 | Accrued liabilities | 225,000 |
| Inventory | 130,000 | Total current liabilities | 302,500 |
| Total current assets | 490,500 | Bonds payable | 160,000 |
| Investments | 100,000 | Total liabilities | 462,500 |
| Property, plant, and equipment (net) | 172,500 | Equity | |
| Intangible assets | 15,000 | Common shares | 210,000 |
| Total assets | $778,000 | Retained earnings | 105,500 |
| | | Total equity | 315,500 |
| | | Liabilities and equity | $778,000 |

Wellbourn Services Ltd.
Statement of Cash Flows
for the year ended December 31, 2023

| | | |
|---|---|---|
| Cash flows from operating activities | | |
| Net income | $ 80,500 | |
| plus: Depreciation | 3,000 | |
| Increase in accounts receivable | (50,000) | |
| Increase in inventory | (34,700) | |
| Decrease in accounts payable | (20,000) | |
| Decrease in accrued liabilities | (5,000) | |
| Net cash used by operating activities | | (26,200) |
| Cash flows from investing activities | | |
| Purchase of equipment | (25,000) | |
| Net cash used by investing activities | | (25,000) |
| Cash flows from financing activities | | |
| Dividends paid | (50,000) | |
| Issued bonds | 160,000 | |
| Net cash received by financing activities | | 110,000 |
| Net increase in cash | | 58,800 |
| Cash balance, January 1 | | 76,700 |
| Cash balance, December 31 | | $135,500 |

As can be seen from the flow of the numbers above, the net income from the statement of income is closed to retained earnings.

The statement of changes in equity total column flows to the equity section of the balance sheet. Finally, the **statement of cash flows** (SCF) ending cash balance must be equal to the cash ending balance reported in the balance sheet, which completes the loop of interconnecting accounts and amounts.

## Statement of Income with Discontinued Operations

### Single-step and Multiple-step Statement of Income

Companies can choose whichever format best suits their reporting needs. Smaller companies tend to use the simpler single-step format, while larger companies tend to use the multiple-step format.

The Wellbourn Services Ltd. statement of income, shown earlier, is an example of a typical **single-step** income statement. For this type of statement, revenue and expenses are each reported in the two sections for continuing operations. Discontinued operations are separately reported below the continuing operations. The separate disclosure and format for the discontinued operations section is a reporting requirement and is discussed and illustrated below. The single-step format makes the statement simple to complete and keeps sensitive information out of the hands of competitive companies, but provides little in the way of analytical detail.

The **multiple-step** income statement format provides much more detail. Below is an example of a multiple-step statement of income for Toulon Ltd. for the year ended December 31, 2023.

**Multiple-step format - typical sections and subtotals:**

Heading

Toulon Ltd.
Statement of Income
for the year ended December 31, 2023

| In $000's except per share amounts | 2023 | 2022 |
|---|---|---|
| Gross profit section with subtotal — Sales | $6,260 | $5,008 |
| Cost of goods sold | 2,500 | 1,750 |
| Gross profit | 3,760 | 3,258 |
| Operating expenses with subtotal — Operating expenses | | |
| Salaries and benefits expense | 650 | 520 |
| Depreciation expense | 35 | 20 |
| Travel and entertainment expense | 150 | 120 |
| Advertising expense | 55 | 45 |
| Freight-out expenses | 10 | 8 |
| Supplies and postage expense | 5 | 4 |
| Telephone and internet expense | 15 | 12 |
| Legal and professional expenses | 8 | 6 |
| Insurance expense | 6 | 5 |
| | 934 | 740 |
| Income from operations | 2,826 | 2,518 |
| Non-operationing section with subtotal — Other revenue and expense | | |
| Interest income from investments | 5 | 5 |
| Gain from sale of trade investments | 4 | 0 |
| Interest expense | (2) | (3) |
| | 7 | 2 |
| Income from continuing operations before income tax | 2,833 | 2,520 |
| Income tax expense → Income tax expense | 850 | 680 |
| Subtotal from continuing operatings → Income from continuing operations | 1,983 | 1,840 |
| Discontinued — Discontinued operations | | |
| Loss from disposal of division (net of tax of $63,000) | (147) | 0 |
| | (147) | 0 |
| Net income (profit or loss) — Net income | 1,836 | 1,840 |
| Earnings per share — Basic earnings per share | | |
| Continuing operations | $16.32 | $13.25 |
| Discontinued operations | (1.21) | 0 |

The multiple-step format with its section subtotals makes performance analysis and ratio calculations such as gross profit margins easier to complete and makes it easier to assess the company's future earnings potential. The multiple-step format also enables investors and creditors to evaluate company performance results from continuing and ongoing operations having a high predictive value separately, compared to non-operating or unusual items having little predictive value.

### Operating Expenses

As discussed in an earlier chapter, expenses from operations can be reported by their nature and, optionally, by function. **Expenses by nature** relate to the type of expense or the source of expense such as salaries, insurance, advertising, travel and entertainment, supplies expense, depreciation and amortization, and utilities expense, to name a few. The statement for Toulon Ltd. is an example of reporting expenses by nature.

**Expenses by function** relate to how various expenses are incurred within the various departments and activities of a company such as selling and administrative expenses.

The sum of all the revenues, expenses, gains, and losses to this point represents the **income or loss from continuing operations**. This is a key component used in performance analysis.

### Income Tax Allocations

This is the process of allocating income tax expense to various categories within the statement of income such as income from continuing operations before taxes and discontinued operations. The purpose of these allocations is to make the information within the statements more informative and complete. For example, Toulon's statement of income for the year ending December 31, 2023, allocates tax at a rate of 30% to the following:

- Income from continuing operations of $850,000 ($2,833,000 $\times$ 30%)
- Loss from disposal of discontinued operations of $63,000

### Discontinued operations

Sometimes companies will sell or shut down certain business operations because the operating segment is no longer profitable, or they may wish to focus their resources on other business operations. Examples are a major business line or geographical area. If the discontinued operation has not yet been sold, then *there must be a formal plan in place to dispose of the component within one year and to report it as a discontinued operation*.

The items reported in this section of the statement of income are to be reported net of tax, with the tax amount disclosed.

### Earnings per Share

Basic earnings per share represent the amount of income attributable to each outstanding common share, as shown in the calculation below:

$$\text{Basic earnings per share (EPS)} = \frac{\text{Net income} - \text{preferred dividends}}{\text{Number of common shares outstanding}}$$

The earnings per share amounts are not required for private companies. This is because ownership of privately owned companies is often held by only a few investors, compared to publicly-traded companies where shares are held by many investors.

Basic earnings per share are to be reported on the face of the statement of income as follows:

- Basic EPS from continuing operations
- Basic EPS from discontinued operations, if any

If the outstanding common shares for Toulon was 121,500, the EPS from continuing operations would be $16.32 (1,983,000÷121,500) and $(1.21) from discontinued operations ($147,000 loss÷121,500), as reported in their statement above. There is also a requirement to report diluted EPS but this is beyond the scope of this course.

## 11.5 Appendix B: Statement of Cash Flows – Direct Method

**The Importance of Cash Flow – For Better, For Worse, For Richer, For Poorer…**

A business is a lot like a marriage. It takes work to make it succeed. One of the keys to business success is managing and maintaining adequate cash flows. In the field of financial management, there is an old saying that *revenue is vanity, profits are sanity, but cash is king*. In other words, a firm's revenues and profits may look spectacular, but this does not guarantee there will be cash in the bank. Without cash, a business cannot pay its bills and it will ultimately not survive.

Let's take a look at the distinctions between revenue and profits, and cash, using a numeric example for a new business:

| Income Statement | | Cash Flows | |
|---|---|---|---|
| Revenue* | $1,000,000 | Revenue (cash received) | $ 400,000 |
| Cost of goods sold** | (500,000) | Cost of goods sold (paid in cash) | (300,000) |
| Gross profit | 500,000 | Net cash | 100,000 |
| Operating expenses*** | 200,000 | Operating expenses (paid in cash) | 90,000 |
| Net income/net profit | $ 300,000 | Net cash | $ 10,000 |

* Sales of $400,000 were paid in cash

** Purchases of $300,000 were paid in cash

*** Operating expenses of $90,000 were cash paid

Revenue is reported in the income statement as $1 million which is a sizeable amount, but only $400,000 was cash paid by customers. (The rest is reported as accounts receivable.) Gross profit

is reported in the income statement as $500,000. This is also a respectable number, but only $100,000 translates into a positive cash flow, because only some of the inventory purchases were paid in cash. (The rest of the inventory is reported as accounts payable.) The company must still pay some of its operating expenses, leaving only $10,000 cash in the bank.

When investors and creditors review the income statement, they will see $1 million in revenue with gross profits of one-half million or 50%, and a respectable net income of $300,000 or 30% of revenue. They could conclude that this looks pretty good for the first year of operations and incorrectly assume that the company now has $300,000 available to spend.

However, lurking deeper in the financial statements is the cash position of the company–the amount of cash left over from this operating cycle. Sadly, there is only $10,000 cash in the bank, so the company cannot even pay its remaining accounts payable in the short term. So, how can management keep track of its cash?

The statement of cash flows is the definitive financial statement to bridge the gaps between revenues and profits, and cash. Therefore, it is vital to understand the statement of cash flows.

As cash is generally viewed by many as the most critical asset to success, this appendix will focus on how to correctly prepare and interpret the statement of cash flows using the direct method.

For example, below is the statement of cash flows using the direct method for the year ended December 31, 2023 for Wellbourn Services Ltd. at December 31, 2023.

Wellbourn Services Ltd.
Statement of Financial Position
December 31, 2023

| Assets | | Liabilities | |
|---|---|---|---|
| Current assets | | Current liabilities | |
| Cash | $135,500 | Accounts payable | $ 77,500 |
| Accounts receivable (net) | 225,000 | Accrued liabilities | 225,000 |
| Inventory | 130,000 | Total current liabilities | 302,500 |
| Total current assets | 490,500 | Bonds payable | 160,000 |
| Investments | 100,000 | Total liabilities | 462,500 |
| Property, plant, and equipment (net) | 246,000 | Equity | |
| Intangible assets | 15,000 | Share capital | 210,000 |
| Total assets | $851,500 | Contributed surplus | 25,000 |
| | | Retained earnings | 105,500 |
| | | Accum. Other Comp. Income(AOCI) | 48,500 |
| | | Total equity | 389,000 |
| | | Liabilities and equity | $851,500 |

Wellbourn Services Ltd.
Statement of Cash Flows
For the year ended December 31, 2023

| | | |
|---|---|---|
| Cash flows from operating activities | | |
| Cash received from sales | $ 50,000 | |
| Cash paid for goods and services | (25,000) | |
| Cash paid to or on behalf of employees | (51,200) | |
| Net cash flows from operating activities | | (26,200) |
| Cash flows from investing activities | | |
| Purchase of equipment | (25,000) | |
| Net cash flows from investing activities | | (25,000) |
| Cash flows from financing activities | | |
| Dividends paid | (50,000) | |
| Issued bonds | 160,000 | |
| Net cash flows from financing activities | | 110,000 |
| Net increase in cash | | 58,800 |
| Cash balance, January 1 | | 76,700 |
| Cash balance, December 31 | | $135,500 |

Note how Wellbourn's ending cash balance of $135,500, from the statement of cash flows for the year ended December 31, matches the ending cash balance in the balance sheet on that date. This is a critical relationship between these two financial statements. The balance sheet provides information about a company's resources (assets) *at a specific point in time*, and whether these resources are financed mainly by debt (current and long-term liabilities) or equity (shareholders' equity). The statement of cash flows identifies how the company utilized its cash inflows and outflows *over the reporting period* and, ultimately, ends with its current cash and cash equivalents balance at the balance sheet date. As well, since the statement of cash flows is prepared on a cash basis, it excludes non-cash accruals like depreciation and interest, making the statement of cash flows harder to manipulate than the other financial statements.

Two methods are used to prepare a statement of cash flows, namely the indirect method and the direct method. The indirect method was discussed earlier in this chapter. Both methods organize the reported cash flows into three activities: operating, investing, and financing. The only difference when applying the direct method is in the operating activities section; the investing and financing sections are prepared exactly the same way for both methods.

For the direct method categories are based on the ***nature*** of the cash flows. With the indirect method the cash flows are based on the income statement and changes in each current asset and liability account, except cash. Below is a comparison of the two methods:

| **Indirect Method** | | | **Direct Method** | | |
|---|---|---|---|---|---|
| Cash flows from operating activities: | | | Cash flows from operating activities: | | |
| Net income | $$ | | Cash received from sales | $$ | |
| Adjust for non-cash items: | | | Cash paid for goods and services | ($$) | |
| Depreciation | $$ | | Cash paid to or on behalf of employees | ($$) | |
| Gain on sale of asset | ($$) | | Cash received for interest income | $$ | |
| Increase in accounts receivable | ($$) | | Cash paid for interest | ($$) | |
| Decrease in inventory | $$ | | Cash paid for income taxes | ($$) | |
| Increase in accounts payable | $$ | | Cash received for dividends | $$ | |
| Net cash flows from operating activities | | $$ | Net cash flows from operating activities | | $$ |

The direct method is straightforward due to the grouping of information by nature. This also makes interpretation of the statement easier for stakeholders. However, companies record thousands of transactions every year and many of them do not involve cash. Since the accounting records are kept on an accrual basis, it can be a time-consuming and expensive task to separate and collect the cash-only data required for the direct method categories by nature. Also, reporting on sensitive information, such as cash receipts from customers and cash payments to suppliers, may not be in the best interest of the company in light of competitor companies using the information to their advantage. For these reasons, many companies prefer not to use the direct method, even though IFRS standards prefer its use over the indirect method. Also, the indirect method may be easier to prepare because it collects much of its data directly from the existing income statement and balance sheet. However, it is more difficult to understand because it uses the accounts-based categories as shown above.

### 11.5.1Preparing a Statement of Cash Flows: Direct Method

As with the indirect method, preparing a statement of cash flows using the direct method is made much easier if specific steps are followed in sequence. Below is a summary of those steps to complete the operating section of the statement of cash flows using the direct method for Watson Ltd:

Watson Ltd.
Partial Balance Sheet
As at December 31, 2023

| | 2023 | 2022 |
|---|---|---|
| Current assets | | |
| Cash | $ 307,500 | $ 250,000 |
| Investments – trading | 12,000 | 10,000 |
| Accounts receivable (net) | 249,510 | 165,000 |
| Notes receivable | 18,450 | 22,000 |
| Inventory (LCNRV) | 708,970 | 650,000 |
| Prepaid insurance expenses | 18,450 | 15,000 |
| Total current assets | 1,314,880 | 1,112,000 |
| | | |
| Current liabilities | | |
| Accounts payable | $ 221,000 | $ 78,000 |
| Accrued interest payable | 24,600 | 33,000 |
| Income taxes payable | 54,120 | 60,000 |
| Unearned revenue | 25,000 | 225,000 |
| Current portion of long-term notes payable | 60,000 | 45,000 |
| Total current liabilities | 384,720 | 441,000 |

Watson Ltd.
Income Statement
For the Year Ended December 31, 2023

| | |
|---|---|
| Sales | $3,500,000 |
| Cost of goods sold | 2,100,000 |
| Gross profit | 1,400,000 |
| | |
| Operating expenses | |
| Salaries and benefits expense | 800,000 |
| Depreciation expense | 43,000 |
| Travel and entertainment expense | 134,000 |
| Advertising expense | 35,000 |
| Freight-out expense | 50,000 |
| Supplies and postage expense | 12,000 |
| Telephone and internet expense | 125,000 |
| Legal and professional expenses | 48,000 |
| Insurance expense | 50,000 |
| | 1,297,000 |
| | |
| Income from operations | 103,000 |
| Other revenue and expenses | |
| Dividend income | 3,000 |
| Interest income | 2,000 |
| Gain from sale of building | 5,000 |
| Interest expense | (3,000) |
| | 7,000 |
| | |
| Income from continuing operations before income tax | 110,000 |
| Income tax expense | 33,000 |
| Net income | $ 77,000 |

**Direct Method Steps:**

**Step 1. Record headings, categories, and three additional columns into an Operating Activities worksheet as shown below:**

Watson Ltd.
Operating Activities

| Cash flows from operating activities | I/S Accounts | Changes to Working Capital Accounts | Net Cash Flow In (Out) |
|---|---|---|---|
| Cash received from sales | | | |
| Cash paid for goods and services | | | |
| Cash paid to employees | | | |
| Cash received for interest income | | | |
| Cash paid for interest | | | |
| Cash paid for income taxes | | | |
| Cash received for dividends | | | |
| Net cash flows from operating activities | | | |

**Step 2. Record each income statement amount into the corresponding direct method category of the Operating Activities worksheet shown below (recall that non-cash items such as depreciation and gains or losses are excluded from a statement of cash flows so they are will be recorded as memo items only):**

| Watson Ltd.<br>Income Statement<br>For the year ended December 31, 2023 | | | Watson Ltd.<br>Operating Activities<br>Cash flows from operating activities | I/S Accounts | | Changes to Working Capital Accounts | Net Cash Flow In (Out) |
|---|---|---|---|---|---|---|---|
| Sales | $3,500,000 | 1 | Cash received from sales | $ 3,500,000 | 1 | | |
| Cost of goods sold | 2,100,000 | 2 | Cash paid for goods and services | (2,100,000) | 2 | | |
| Gross profit | 1,400,000 | | | (134,000) | 5 | | |
| | | | | (35,000) | 6 | | |
| Operating expenses | | | | (50,000) | 7 | | |
| Salaries and benefits expense | 800,000 | 3 | | (12,000) | 8 | | |
| Depreciation expense | 43,000 | 4 | | (125,000) | 9 | | |
| Travel and entertainment expense | 134,000 | 5 | | (48,000) | 10 | | |
| Advertising expense | 35,000 | 6 | | (50,000) | 11 | | |
| Freight-out expenses | 50,000 | 7 | Cash paid to employees | (800,000) | 3 | | |
| Supplies and postage expense | 12,000 | 8 | Cash received for interest income | 2,000 | 13 | | |
| Telephone and internet expense | 125,000 | 9 | Cash paid for interest | (3,000) | 15 | | |
| Legal and professional expenses | 48,000 | 10 | Cash paid for income taxes | (33,000) | 16 | | |
| Insurance expense | 50,000 | 11 | Cash received for dividends | 3,000 | 12 | | |
| | 1,297,000 | | | | | | |
| Income from operations | 103,000 | | | | | | |
| Other revenue and expenses | | | | | | | |
| Dividend income | 3,000 | 12 | | | | | |
| Interest income from investments | 2,000 | 13 | | | | | |
| Gain from sale of building | 5,000 | 14 | | | | | |
| Interest expense | (3,000) | 15 | | | | | |
| | 7,000 | | | | | | |
| Income from continuing operations before income taxes | 110,000 | | *Memo items:* | | | | |
| Income tax expense | 33,000 | 16 | *Depreciation expense* | (43,000) | 4 | | |
| Net income | 77,000 | | *Gain on sale of building* | 5,000 | 14 | | |
| | | | | $ 77,000 | | | |
| | | | Net cash flows from operating activities | | | | |

**Step 3. Calculate the net change amount for each current asset (except cash), and each current liability from the balance sheet below. Record each change amount in the second column of the Operating Activities worksheet:**

Watson Ltd.
Balance Sheet
as at December 31, 2023

Calculate change

| | 2023 | 2022 | Change | |
|---|---|---|---|---|
| Current assets | | | | |
| Cash | $ 307,500 | $ 250,000 | | |
| Investments – trading | 12,000 | 10,000 | $ (2,000) | 17 |
| Accounts receivable (net) | 249,510 | 165,000 | (84,510) | 18 |
| Notes receivable | 18,450 | 22,000 | 3,550 | 19 |
| Inventory | 708,970 | 650,000 | (58,970) | 20 |
| Prepaid insurance expenses | 18,450 | 15,000 | (3,450) | 21 |
| Total current assets | 1,314,880 | 1,112,000 | | |
| Current liabilities | | | | |
| Accounts payable | $ 221,000 | $ 78,000 | $ 143,000 | 22 |
| Accrued interest payable | 24,600 | 33,000 | (8,400) | 23 |
| Income taxes payable | 54,120 | 60,000 | (5,880) | 24 |
| Unearned revenue | 25,000 | 225,000 | (200,000) | 25 |
| Current portion of long-term notes payable | 60,000 | 45,000 | N/A | |
| Total current liabilities | 384,720 | 441,000 | (216,660) | |

Record each change to the corresponding category

Watson Ltd.
Operating Activities

| Cash flows from operating activities | I/S Accounts | | Changes to Working Capital Accounts | | Net Cash Flow In (Out) |
|---|---|---|---|---|---|
| Cash received from sales | $ 3,500,000 | 1 | $ (84,510) | 18 | |
| | | | 3,550 | 19 | |
| | | | (200,000) | 25 | |
| Cash paid for goods and services | (2,100,000) | 2 | (58,970) | 20 | |
| | (134,000) | 5 | (3,450) | 21 | |
| | (35,000) | 6 | 143,000 | 22 | |
| | (50,000) | 7 | | | |
| | (12,000) | 8 | | | |
| | (125,000) | 9 | | | |
| | (48,000) | 10 | | | |
| | (50,000) | 11 | | | |
| Cash paid to employees | (800,000) | 3 | | | |
| Cash received for interest income | 2,000 | 13 | (2,000) | 17 | |
| Cash paid for interest | (3,000) | 15 | (8,400) | 23 | |
| Cash paid for income taxes | (33,000) | 16 | (5,880) | 24 | |
| Cash received for dividends | 3,000 | 12 | | | |
| *Memo items:* | | | | | |
| *Depreciation expense* | (43,000) | 4 | | | |
| *Gain on sale of building* | 5,000 | 14 | | | |
| Net cash flows from operating activities | $ 77,000 | | $ (216,660) | | |

Note how items 13 and 17 on the operating activities statement cancel each other out. This is because the interest income was accrued and not actually received in cash. Also note that the current portion of long-term notes was excluded from the operating activities section. Recall from the earlier chapter material on the indirect method that this account is combined with its corresponding long-term note payable account in the financing section of the statement of cash flows.

**Step 4. Calculate the net cash flow total for each category and the net cashflow total for the operating activities section. Transfer the amounts to the statement of cash flows, operating activities section:**

| | Watson Ltd. Operating Activities | | Changes to Working Capital | | Net Cash Flow |
|---|---|---|---|---|---|
| Cash flows from operating activities | I/S Accounts | | Accounts | | In (Out) |
| Cash received from sales | $ 3,500,000 | 1 | $ (84,510) | 18 | |
| | | | 3,550 | 19 | |
| | | | (200,000) | 25 | $ 3,219,040 |
| Cash paid for goods and services | (2,100,000) | 2 | (58,970) | 20 | |
| | (134,000) | 5 | (3,450) | 21 | |
| | (35,000) | 6 | 143,000 | 22 | |
| | (50,000) | 7 | | | |
| | (12,000) | 8 | | | |
| | (125,000) | 9 | | | |
| | (48,000) | 10 | | | |
| | (50,000) | 11 | | | (2,473,420) |
| Cash paid to employees | (800,000) | 3 | | | (800,000) |
| Cash received for interest income | 2,000 | 13 | (2,000) | 17 | 0 |
| Cash paid for interest | (3,000) | 15 | (8,400) | 23 | (11,400) |
| Cash paid for income taxes | (33,000) | 16 | (5,880) | 24 | (38,880) |
| Cash received for dividends | 3,000 | 12 | | | 3,000 |
| *Memo items:* | | | | | |
| *Depreciation expense* | (43,000) | 4 | | | |
| *Gain on sale of building* | 5,000 | 14 | | | |
| Net cash flows from operating activities | $ 77,000 | | $ (216,660) | | $ (101,660) |

The completed portion of the statement of cash flows, operating section is shown below:

Watson Ltd.
Statement of Cash Flows – Operating Activities
For the Year Ended December 31, 2023

| | | |
|---|---|---|
| Cash flows from operating activities: | | |
| Cash received from sales | $ 3,219,040 | |
| Cash paid for goods and services | (2,473,420) | |
| Cash paid to or on behalf of employees | (800,000) | |
| Cash paid for interest | (11,400) | |
| Cash paid for income taxes | (38,880) | |
| Cash received for dividends | 3,000 | |
| Net cash flows from operating activities | | $(101,660) |

## Summary of Chapter 11 Learning Objectives

### LO1 – Explain the purpose of the statement of cash flows.

The statement of cash flows is one of the four financial statements. It highlights the net increase or decrease in the cash and cash equivalents balance during the accounting period, and details the sources and uses of cash that caused that change.

### LO2 – Prepare a statement of cash flows.

The operating activities section of the statement of cash flows can be prepared using the direct or indirect method. This textbook focuses only on the indirect method. The result of both methods is identical; it is only how the calculations are performed that differs. The operating activities section begins with accrual net income and, by adjusting for changes in current assets, current liabilities, adding back depreciation expense, and adding back/subtracting losses/gains on disposal of non-current assets, arrives at net income on a cash basis. The investing activities section analyzes cash inflows and outflows from the sale and purchase of non-current assets. The finance activities section details the cash inflows and outflows resulting from the issue and payment of loans, issue and repurchase of shares, and payment of dividends.

### LO3 – Interpret a statement of cash flows.

A statement of cash flows contributes to the decision-making process by explaining the sources and uses of cash. The operating activities section can signal potential areas of concern by focusing on differences between accrual net income and cash basis net income. The investing activities

section can highlight if cash is being used to acquire assets for generating revenue, while the financing activities section can identify where the cash to purchase those assets might be coming from. Those who use financial statements can focus on the effectiveness of management's investing and financing decisions and how these may affect future financial performance.

## Discussion Questions

1. Using an example, explain in your own words the function of a statement of cash flows. Why is it prepared? What does it communicate to the reader of financial statements? What is its advantage over a balance sheet? over an income statement?
2. Why are financing and investing activities of a corporation important to financial statement readers?
3. How does an increase in accounts receivable during the year affect the cash flow from operating activities?
4. What effect does the declaration of a cash dividend have on cash flow? the payment of a dividend declared and paid during the current year? the payment of a dividend declared in the preceding year?
5. Why may a change in the Short-term investments account not affect the amount of cash provided by operations?
6. Why is it possible that cash may have decreased during the year, even though there has been a substantial net income during the same period?
7. Describe common transactions affecting balance sheet accounts that use cash. Explain how these items are analysed to identify cash flows that have occurred during the year.

## Exercises

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**EXERCISE 11–1 (LO1,2)**

The following transactions were carried out by Crozier Manufacturing Limited.

**Required**: Indicate into which category each transaction or adjustment is placed in the statement of cash flows: operating (O), financing (F), or investing (I) activities. For non-cash investing/financing activities that are disclosed in a note to the financial statements, indicate (NC).

_____ A payment of $5,000 was made on a bank loan.
_____ Depreciation expense for equipment was $1,000.
_____ $10,000 of share capital was issued for cash.
_____ Cash dividends of $2,500 were declared and paid to shareholders.
_____ Bonds were issued in exchange for equipment costing $7,000.
_____ Land was purchased for $25,000 cash.
_____ $750 of accrued salaries was paid.
_____ $10,000 of accounts receivable was collected.
_____ A building was purchased for $80,000: $30,000 was paid in cash and the rest was borrowed.
_____ A long-term investment in shares of another company was sold for $50,000 cash.
_____ Equipment was sold for $6,000. The related accumulation depreciation was $3,000 with an original cost of $10,000.
_____ $1,200 was paid for a 12-month insurance policy in effect next year.
_____ A patent was amortized for $500.
_____ Bonds were issued for $50,000 cash.

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**EXERCISE 11–2 (LO2)** **Watch video**

Assume the following selected income statement and balance sheet information for Larriet Inc.:

Larriet Inc.
Balance Sheet Information
(000's)

| | December 31, | |
|---|---|---|
| | 2023 | 2022 |
| Cash | $40 | $22 |
| Accounts receivable | 34 | 39 |
| Merchandise inventory | 150 | 146 |
| Prepaid expenses | 3 | 2 |
| Machinery | 125 | 138 |
| Accumulated depreciation | 55 | 42 |
| Accounts payable | 29 | 31 |
| Dividends payable | 1 | 5 |
| Bonds payable | 15 | 38 |
| Common shares | 208 | 150 |
| Retained earnings | 44 | 81 |

Larriet Inc.
Income Statement
Year Ended December 31, 2023
(000's)

| | | |
|---|---|---|
| Sales revenue | | $385 |
| Cost of goods sold | $224 | |
| Other operating expenses | 135 | |
| Depreciation expense | 25 | |
| Loss on sale of machinery | 3 | (387) |
| Net loss | | $2 |

Additional information:

i. Machinery costing $20 thousand was sold for cash.

ii. Machinery was purchased for cash.

iii. The change in retained earnings was caused by the net loss and the declaration of dividends.

**Required**:

**a.** Reconstruct the journal entry regarding the sale of the machinery.

**b.** Reconstruct the entry regarding the purchase of machinery.

**c.** Reconstruct the entry regarding the declaration of dividends.

**d.** Reconstruct the entry regarding the payment of dividends.

**e.** Prepare the statement of cash flows for the year ended December 31, 2023.

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**EXERCISE 11–3 (LO2,3)**

The comparative statement of financial positions of Glacier Corporation showed the following at December 31.

| | *2023* | *2022* |
|---|---|---|
| *Debits* | | |
| Cash | $ 10 | $ 8 |
| Accounts receivable | 18 | 10 |
| Merchandise inventory | 24 | 20 |
| Land | 10 | 24 |
| Plant and equipment | 94 | 60 |
| | $156 | $122 |
| *Credits* | | |
| Accumulated depreciation | $ 14 | $ 10 |
| Accounts payable | 16 | 12 |
| Non-current borrowings | 40 | 32 |
| Common shares | 60 | 50 |
| Retained earnings | 26 | 18 |
| | $156 | $122 |

The statement of profit and loss for 2023 was as follows:

Glacier Corporation
Statement of Profit and Loss
For the Year Ended December 31, 2023

| | | |
|---|---|---|
| Sales | | $ 300 |
| Cost of sales | | 200 |
| Gross profit | | 100 |
| Operating expenses | | |
| Rent | $ 77 | |
| Depreciation | 6 | 83 |
| Income from operations | | 17 |
| Other gains (losses) | | |
| Gain on sale of equipment | 1 | |
| Loss on sale of land | (4) | (3) |
| Net income | | $ 14 |

Additional information:

i. Cash dividends paid during the year amounted to $6.

ii. Land was sold during the year for $10. It was originally purchased for $14.

iii. Equipment was sold during the year that originally cost $7. Carrying amount was $5.

iv. Equipment was purchased for $41.

**Required**:

**a.** Prepare a statement of cash flows for the year ended December 31, 2023.

**b.** Comment on the operating, financing, and investing activities of Glacier Corporation for the year ended December 31, 2023.

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**EXERCISE 11–4 (LO2,3)**

The following trial balance has been prepared from the ledger of Lelie Ltd. at December 31, 2023, following its first year of operations.

| | *(in $000's)* | |
|---|---|---|
| | *Debits* | *Credits* |
| Cash | $ 40 | |
| Accounts receivable | 100 | |
| Merchandise inventory | 60 | |
| Prepaid rent | 10 | |
| Equipment | 160 | |
| Accumulated depreciation – equipment | | $ 44 |
| Patent | -0- | |
| Accounts payable | | 50 |
| Dividends payable | | 10 |
| Income taxes payable | | 8 |
| Note payable – due 2027 | | 80 |
| Common shares | | 140 |
| Retained earnings | | -0- |
| Cash dividends | 20 | |
| Sales | | 225 |
| Depreciation | 44 | |
| Cost of goods sold | 100 | |
| Selling and administrative expenses | 28 | |
| Income taxes expense | 10 | |
| Gain on sale of land | | 15 |
| | $ 572 | $ 572 |

Additional information:

i. A patent costing $30,000 was purchased, and then sold during the year for $45,000.

ii. Lelie assumed $100,000 of long-term debt during the year.

iii. Some of the principal of the long-term debt was repaid during the year.

iv. Lelie issued $40,000 of common shares for equipment. Other equipment was purchased for $120,000 cash. No equipment was sold during the year.

**Required**:

**a.** Prepare a statement of cash flows for the year ended December 31, 2023.

**b.** Explain what the statement of cash flows tells you about Lelei Ltd. at the end of December 31, 2023.

**EXERCISE 11–5 (LO2,3)**

The accounts balances of ZZ Corp. at December 31 appear below:

| | *2023* | *2022* |
|---|---|---|
| *Debits* | | |
| Cash | $ 40,000 | $ 30,000 |
| Accounts receivable | 40,000 | 30,000 |
| Merchandise inventory | 122,000 | 126,000 |
| Prepaid expenses | 6,000 | 4,000 |
| Land | 8,000 | 30,000 |
| Buildings | 220,000 | 160,000 |
| Equipment | 123,000 | 80,000 |
| | $559,000 | $460,000 |
| *Credits* | | |
| Accounts payable | $ 48,000 | $ 50,000 |
| Accumulated depreciation | 86,000 | 70,000 |
| Note payable, due 2026 | 70,000 | 55,000 |
| Common shares | 300,000 | 250,000 |
| Retained earnings | 55,000 | 35,000 |
| | $559,000 | $460,000 |

The following additional information is available:

i. Net income for the year was $40,000; income taxes expense was $4,000 and depreciation recorded on building and equipment was $27,000.

ii. Equipment costing $30,000 was purchased; one-half was paid in cash and a 4-year promissory note signed for the balance.

iii. Equipment costing $50,000 was purchased in exchange for 6,000 common shares.

iv. Equipment was sold for $15,000 that originally cost $37,000. The gain/loss was reported in net income.

v. An addition to the building was built during the year.

vi. Land costing $22,000 was sold for $26,000 cash during the year. The related gain was reported in the income statement.

vii. Cash dividends were paid.

**Required**:

**a.** Prepare a statement of cash flows for the year ended December 31, 2023.

**b.** What observations about ZZ Corp. can be made from this statement?

---

**EXERCISE 11–6 (LO2,3)**

Below is a comparative statement of financial position for Egglestone Vibe Inc. as at December 31, 2023:

Egglestone Vibe Inc.
Statement of Financial Position

| | *December 31* | |
|---|---|---|
| | *2023* | *2022* |
| Assets: | | |
| Cash | $ 166,400 | $ 146,900 |
| Accounts receivable | 113,100 | 76,700 |
| Inventory | 302,900 | 235,300 |
| Land | 84,500 | 133,900 |
| Plant assets | 507,000 | 560,000 |
| Accumulated depreciation – plant assets | (152,100) | (111,800) |
| Goodwill | 161,200 | 224,900 |
| Total assets | $1,183,000 | $1,265,900 |
| Liabilities and Equity: | | |
| Accounts payable | 38,100 | 66,300 |
| Dividend payable | 19,500 | 41,600 |
| Notes payable | 416,000 | 565,500 |
| Common shares | 322,500 | 162,500 |
| Retained earnings | 386,900 | 430,000 |
| Total liabilities and equity | $1,183,000 | $1,265,900 |

Additional information:

i. Net income for the 2023 fiscal year was $24,700. Depreciation expense was $55,900.

ii. During 2023, land was purchased for cash of $62,400 for expansion purposes. Six months later, another section of land with a carrying value of $111,800 was sold for $150,000 cash.

iii. On June 15, 2023, notes payable of $160,000 was retired in exchange for the issuance of common shares. On December 31, 2023, notes payable for $10,500 were issued for additional cash flow.

iv. At year-end, plant assets originally costing $53,000 were sold for $27,300, since they were no longer contributing to profits. At the date of the sale, the accumulated depreciation for the asset sold was $15,600.

v. Cash dividends were declared and a portion of those were paid in 2023.

vi. Goodwill impairment loss was recorded in 2023 to reflect a decrease in the recoverable amount of goodwill. (Hint: Review impairment of long-lived assets in Chapter 8 of the text.)

**Required**:

**a.** Prepare a statement of cash flows for the year ended December 31, 2023.

**b.** Analyse and comment on the results reported in the statement.

---

**EXERCISE 11–7 (LO2)**

Below is a comparative statement of financial position for Nueton Ltd. as at June 30, 2023:

Nueton Ltd.
Balance Sheet

| | *June 30* | |
|---|---|---|
| | *2023* | *2022* |
| Cash | $ 55,800 | $ 35,000 |
| Accounts receivable (net) | 80,000 | 62,000 |
| Inventory | 66,800 | 96,800 |
| Prepaid expenses | 5,400 | 5,200 |
| Equipment | 130,000 | 120,000 |
| Accumulated depreciation | 28,000 | 10,000 |
| Accounts payable | 6,000 | 32,000 |
| Wages payable | 7,000 | 16,000 |
| Income taxes payable | 2,400 | 3,600 |
| Notes payable (long-term) | 40,000 | 70,000 |
| Common shares | 230,000 | 180,000 |
| Retained earnings | 24,600 | 7,400 |

Nueton Ltd.
Income Statement
For Year Ended June 30, 2023

| | |
|---|---|
| Sales | $500,000 |
| Cost of goods sold | 300,000 |
| Gross profit | 200,000 |
| Operating expenses: | |
| Depreciation expense | 58,600 |
| Other expenses | 80,000 |
| Total operating expenses | 138,600 |
| Income from operations | 61,400 |
| Gain on sale of equipment | 2,000 |
| Income before taxes | 63,400 |
| Income taxes | 19,020 |
| Net income | $ 44,380 |

Additional Information:

i. A note is retired at its carrying value.

ii. New equipment is acquired during 2023 for $58,600.

iii. The gain on sale of equipment costing $48,600 during 2023 is $2,000.

**Required**: Use the Neuton Ltd. information given above to prepare a statement of cash flows for the year ended June 30, 2023.

---

**EXERCISE 11–8 (LO2)**

The trial balance for Yucotin Corp. is shown below. All accounts have normal balances.

Yucotin Corp.
Trial Balance

| | *December 31* | |
|---|---|---|
| | *2023* | *2022* |
| Cash | $ 248,000 | $ 268,000 |
| Accounts receivable | 62,000 | 54,000 |
| Inventory | 406,000 | 261,000 |
| Equipment | 222,000 | 198,000 |
| Accumulated depreciation, equipment | (104,000) | (68,000) |
| Accounts payable | 46,000 | 64,000 |
| Income taxes payable | 18,000 | 16,000 |
| Common shares | 520,000 | 480,000 |
| Retained earnings | 116,000 | 58,000 |
| Sales | 1,328,000 | 1,200,000 |
| Cost of goods sold | 796,000 | 720,000 |
| Depreciation expense | 36,000 | 30,000 |
| Operating expenses | 334,000 | 330,000 |
| Income taxes expense | 28,000 | 25,000 |

Additional information:

i. Equipment is purchased for $24,000 cash.

ii. 16,000 common shares are issued for cash at $2.50 per share.

iii. Declared and paid $74,000 of cash dividends during the year.

**Required**: Prepare a statement of cash flows for 2023.

---

**EXERCISE 11–9 (LO2)**

Below is an unclassified balance sheet and income statement for Tubric Corp. for the year ended December 31, 2023:

Tubric Corp.
Balance Sheet

| | *December 31* | |
|---|---|---|
| | *2023* | *2022* |
| Cash | $ 40,000 | $ 20,800 |
| Petty cash | 14,400 | 8,000 |
| Accounts receivable | 73,600 | 31,200 |
| Inventory | 95,200 | 69,600 |
| Long-term investment | 0 | 14,400 |
| Land | 64,000 | 64,000 |
| Building and equipment | 370,400 | 380,000 |
| Accumulated depreciation | 98,400 | 80,800 |
| Total assets | $559,200 | $507,200 |
| Accounts payable | 16,600 | 31,500 |
| Dividends payable | 1,000 | 500 |
| Bonds payable | 20,000 | 0 |
| Preferred shares | 68,000 | 68,000 |
| Common shares | 338,400 | 338,400 |
| Retained earnings | 115,200 | 68,800 |
| Total liabilities and equity | $559,200 | $507,200 |

Tubric Corp.
Income Statement
For the year ended December 31, 2023

| | | |
|---|---|---|
| Sales | | $720,000 |
| Cost of goods sold | | 480,000 |
| Gross profit | | 240,000 |
| Operating expenses | $110,600 | |
| Depreciation expense | 34,400 | |
| Loss on sale of equipment | 3,200 | |
| Income tax expense | 15,000 | |
| Gain on sale of long-term investment | (9,600) | 153,600 |
| Net income | | $ 86,400 |

During 2023, the following transactions occurred:

i. Purchased equipment for $16,000 cash.

ii. Sold the long-term investment on January 2, 2023, for $24,000.

iii. Sold equipment originally costing $25,600 for $5,600 cash. Equipment had $16,800 of accumulated depreciation at the time of the sale.

iv. Issued $20,000 of bonds payable at par.

**Required**:

**a.** Calculate the cash paid dividends for 2023.

**b.** Prepare a statement of cash flows for Tubric Corp. for the year ended December 31, 2023.

---

**EXERCISE 11–10 (LO2)**

*This exercise uses the direct method for creating Statements of Cash Flows as explained in Section 11.5.*

Below are the unclassified financial statements for Rorrow Ltd. for the year ended December 31, 2023:

Rorrow Ltd.
Balance Sheet
As at December 31, 2023

| | 2023 | 2022 |
|---|---|---|
| Cash | $ 152,975 | $ 86,000 |
| Accounts receivable (net) | 321,640 | 239,080 |
| Inventory | 801,410 | 855,700 |
| Prepaid insurance expenses | 37,840 | 30,100 |
| Equipment | 2,564,950 | 2,156,450 |
| Accumulated depreciation, equipment | (625,220) | (524,600) |
| Total assets | $3,253,595 | $2,842,730 |
| | | |
| Accounts payable | $ 478,900 | $ 494,500 |
| Salaries and wages payable | 312,300 | 309,600 |
| Accrued interest payable | 106,210 | 97,180 |
| Bonds payable, due July 31, 2031 | 322,500 | 430,000 |
| Common shares | 1,509,300 | 1,204,000 |
| Retained earnings | 524,385 | 307,450 |
| Total liabilities and shareholders' equity | $3,253,595 | $2,842,730 |

Rorrow Ltd.
Income Statement
For the Year Ended December 31, 2023

| | |
|---|---|
| Sales | $5,258,246 |
| Expenses | |
| Cost of goods sold | 3,150,180 |
| Salaries and benefits expense | 754,186 |
| Depreciation expense | 100,620 |
| Interest expense | 258,129 |
| Insurance expense | 95,976 |
| Income tax expense | 253,098 |
| | 4,612,189 |
| Net income | $ 646,057 |

**Required:**

**a.** Complete the direct method worksheet for the operating activities section for the year ended December 31, 2023.

**b.** Prepare the operating activities section for Rorrow Ltd. for the year ended December 31, 2023.

---

**EXERCISE 11–11 (LO2)**

*This exercise is similar to Exercise 11–4 except that it uses the direct method for creating Statements of Cash Flows as explained in Section 11.5.*

The following trial balance has been prepared from the ledger of Lelie Ltd. at December 31, 2023, following its first year of operations.

| | *(in $000's)* | |
|---|---|---|
| | *Debits* | *Credits* |
| Cash | $ 40 | |
| Accounts receivable | 100 | |
| Merchandise inventory | 60 | |
| Prepaid rent | 10 | |
| Equipment | 160 | |
| Accumulated depreciation – equipment | | $ 44 |
| Patent | -0- | |
| Accounts payable | | 50 |
| Dividends payable | | 10 |
| Income taxes payable | | 8 |
| Note payable – due 2027 | | 80 |
| Common shares | | 140 |
| Retained earnings | | -0- |
| Cash dividends | 20 | |
| Sales | | 225 |
| Depreciation | 44 | |
| Cost of goods sold | 100 | |
| Selling and administrative expenses | 28 | |
| Income taxes expense | 10 | |
| Gain on sale of land | | 15 |
| | $ 572 | $ 572 |

Additional information:

i. A patent costing $30,000 was purchased, and then sold during the year for $45,000.

ii. Lelie assumed $100,000 of long-term debt during the year.

iii. Some of the principal of the long-term debt was repaid during the year.

iv. Lelie issued $40,000 of common shares for equipment. Other equipment was purchased for $120,000 cash. No equipment was sold during the year.

**Required**:

**a.** Prepare a statement of cash flows for the year ended December 31, 2023 using the direct method.

**b.** Explain what the statement of cash flows tells you about Lelei Ltd. at the end of December 31, 2023.

**EXERCISE 11–12 (LO2)**

*This exercise is similar to Exercise 11–7 except that it uses the direct method for creating Statements of Cash Flows as explained in Section 11.5.*

Below is a comparative statement of financial position for Nueton Ltd. as at June 30, 2023:

Nueton Ltd.
Balance Sheet

| | *June 30* | |
|---|---|---|
| | *2023* | *2022* |
| Cash | $ 55,800 | $ 35,000 |
| Accounts receivable (net) | 80,000 | 62,000 |
| Inventory | 66,800 | 96,800 |
| Prepaid expenses | 5,400 | 5,200 |
| Equipment | 130,000 | 120,000 |
| Accumulated depreciation | 28,000 | 10,000 |
| Accounts payable | 6,000 | 32,000 |
| Wages payable | 7,000 | 16,000 |
| Income taxes payable | 2,400 | 3,600 |
| Notes payable (long-term) | 40,000 | 70,000 |
| Common shares | 230,000 | 180,000 |
| Retained earnings | 24,600 | 7,400 |

Nueton Ltd.
Income Statement
For Year Ended June 30, 2023

| | |
|---|---|
| Sales | $500,000 |
| Cost of goods sold | 300,000 |
| Gross profit | 200,000 |
| Operating expenses: | |
| Depreciation expense | 58,600 |
| Other expenses | 80,000 |
| Total operating expenses | 138,600 |
| Income from operations | 61,400 |
| Gain on sale of equipment | 2,000 |
| Income before taxes | 63,400 |
| Income taxes | 19,020 |
| Net income | $ 44,380 |

Additional Information:

i. A note is retired at its carrying value.

ii. New equipment is acquired during 2023 for $58,600.

iii. The gain on sale of equipment costing $48,600 during 2023 is $2,000.

iv. Assume that Other expenses includes salaries expense of $30,000, interest expense of $5,000 and the remaining for various purchases of goods and services.

**Required**: Use the Neuton Ltd. information given above to prepare a statement of cash flows for the year ended June 30, 2023 using the direct method.

## Problems

---

**PROBLEM 11–1 (LO2)**

Assume the following income statement information:

| | |
|---|---|
| Sales (all cash) | $35 |
| Operating Expenses | |
| Depreciation | 10 |
| Income before Other Item | 25 |
| Other Item | |
| Gain on Sale of Equipment | 8 |
| Net Income | $33 |

**Required**:

1. Assume the equipment that was sold for a gain of $8 originally cost $20, had a book value of $4 at the date of disposal, and was sold for $12. Prepare the journal entry to record the disposal. What is the cash effect of this entry?

2. Calculate cash flow from operating activities.

**PROBLEM 11–2 (LO2)**

Assume the following selected income statement and balance sheet information for the year ended December 31, 2023:

| | |
|---|---|
| Sales | $200 |
| Cost of Goods Sold | 120 |
| Gross Profit | 80 |
| *Operating Expenses* | |
| Rent | 30 |
| Net Income | $50 |

| | *2023* | *2022* |
|---|---|---|
| | *Dr. (Cr.)* | *Dr. (Cr.)* |
| Cash | $100 | $86 |
| Accounts Receivable | 60 | 40 |
| Inventory | 36 | 30 |
| Prepaid Rent | 10 | -0- |
| Retained Earnings | (206) | (156) |

**Required**:

1. Reconcile the change in retained earnings from December 31, 2022 to December 31, 2023.
2. Calculate cash flow from operating activities.

**PROBLEM 11–3 (LO2)**

Assume the following income statement and balance sheet information:

| | |
|---|---|
| Revenue | $-0- |
| Depreciation Expense | (100) |
| Net Loss | $(100) |

| | *2023* | *2022* |
|---|---|---|
| | *Dr. (Cr.)* | *Dr. (Cr.)* |
| Cash | $350 | $650 |
| Machinery | 500 | 200 |
| Accumulated Depreciation – Machinery | (250) | (150) |
| Retained Earnings | (600) | (700) |

No machinery was disposed during the year. All machinery purchases were paid in cash.

**Required**:

1. Prepare a journal entry to record the depreciation expense for the year. Determine the cash effect.
2. Prepare a journal entry to account for the change in the Machinery balance sheet account. What is the cash effect of this entry?
3. Prepare a statement of cash flows for the year ended December 31, 2023.

---

**PROBLEM 11–4 (LO2)**

Assume the following income statement and balance sheet information:

| | |
|---|---|
| Service Revenue (all cash) | $175 |
| Operating Expenses | |
| Salaries (all cash) | 85 |
| Net Income | $90 |

| | *2023* | *2022* |
|---|---|---|
| | *Dr. (Cr.)* | *Dr. (Cr.)* |
| Cash | $1,350 | $1,800 |
| Borrowings | (800) | (1,300) |
| Retained Earnings | (550) | (500) |

Other information: All dividends were paid in cash.

**Required**:

1. Calculate cash flow from operating activities.
2. Calculate the amount of dividends paid during the year.
3. Calculate cash flow used by financing activities.

---

**PROBLEM 11–5 (LO2)**

The following transactions occurred in the Hubris Corporation during the year ended December 31, 2023.

| | | |
|---|---|---|
| (a) | Net income for the year (accrual basis) | $800 |
| (b) | Depreciation expense | 120 |
| (c) | Increase in wages payable | 20 |
| (d) | Increase in accounts receivable | 40 |
| (e) | Decrease in merchandise inventory | 50 |
| (f) | Amortization of patents | 5 |
| (g) | Payment of non-current borrowings | 250 |
| (h) | Issuance of common shares for cash | 500 |
| (i) | Payment of cash dividends | 30 |

Other information: Cash at December 31, 2023 was $1,200.

**Required**: Prepare a statement of cash flows.

---

**PROBLEM 11–6 (LO2,3)**

During the year ended December 31, 2023, the Wheaton Co. Ltd. reported $95,000 of revenues, $70,000 of operating expenses, and $5,000 of income taxes expense. Following is a list of transactions that occurred during the year:

(a) Depreciation expense, $3,000 (included with operating expenses)

(b) Increase in wages payable, $500

(c) Increase in accounts receivable, $900

(d) Decrease in merchandise inventory, $1,200

(e) Amortisation of patent, $100

(f) Non-current borrowings paid in cash, $5,000

(g) Issuance of common shares for cash, $12,500

(h) Equipment, cost $10,000, acquired by issuing common shares

(i) At the end of the fiscal year, a $5,000 cash dividend was declared but not paid.

(j) Old machinery sold for $6,000 cash; it originally cost $15,000 (one-half depreciated). Loss reported on income statement as ordinary item and included in the $70,000 of operating expenses.

(k) Decrease in accounts payable, $1,000.

(l) Cash at January 1, 2023 was $1,000; increase in cash during the year, $37,900

(m) There was no change in income taxes owing.

**Required**:

1. Prepare a statement of cash flows.
2. Explain what this statement tells you about Wheaton Co. Ltd.

# Chapter 12

# Financial Statement Analysis

Financial statements can be used by shareholders, creditors, and other interested parties to analyze a corporation's liquidity, profitability, and financial structure compared to prior years and other similar companies. As part of this analysis, financial evaluation tools are used. Some of these tools are discussed in this chapter.

## Chapter 12 Learning Objectives

LO1 – Describe ratio analysis, and explain how the liquidity, profitability, leverage, and market ratios are used to analyze and compare financial statements.

LO2 – Describe horizontal and vertical trend analysis, and explain how they are used to analyze financial statements.

## Concept Self-Check

Use the following as a self-check while working through Chapter 12.

1. What is working capital?
2. What is meant by *liquidity?*
3. What are some ratios commonly used to evaluate liquidity?
4. What is a company's revenue operating cycle and how is it measured?
5. What profitability ratios can be used to evaluate a corporation?
6. How is the amount of shareholder claims against a corporation's assets compared to the amount of creditor claims?
7. What are the relative advantages of short-term and long-term debt?
8. What are some measures used to evaluate the future financial prospects of a company for investors?
9. What is a *horizontal analysis?* How does it differ from a *vertical analysis?*

10. What is a common-size analysis?

**NOTE:** The purpose of these questions is to prepare you for the concepts introduced in the chapter. Your goal should be to answer each of these questions as you read through the chapter. If, when you complete the chapter, you are unable to answer one or more the Concept Self-Check questions, go back through the content to find the answer(s). Solutions are not provided to these questions.

## 12.1 Introduction to Ratio Analysis

LO1 – Describe ratio analysis, and explain how the liquidity, profitability, leverage, and market ratios are used to analyze and compare financial statements.

A common way to evaluate financial statements is through **ratio analysis**. A *ratio* is a relationship between two numbers of the same kind. For example, if there are two apples and three oranges, the ratio of the number of apples to the number of oranges is 2:3 (read as "two to three"). A *financial ratio* is a measure of the relative magnitude of two selected numerical values taken from a company's financial statements. For instance, the gross profit percentage studied in Chapter 6, also known as the gross profit ratio, expresses the numerical relationship between gross profit and sales. If a company has a gross profit ratio of 0.25:1, this means that for every $1 of sales, the company earns, on average, $0.25 to cover expenses other than cost of goods sold. Another way of stating this is to say that the gross profit ratio is 25%.[1]

Financial ratios are effective tools for measuring the financial performance of a company because they provide a common basis for evaluation — for instance, the amount of gross profit generated by each dollar of sales for different companies. Numbers that appear on financial statements need to be evaluated in context. It is their relationship to other numbers and the relative changes of these numbers that provide some insight into the financial health of a business. One of the main purposes of ratio analysis is to highlight areas that require further analysis and investigation. Ratio analysis alone will not provide a definitive financial evaluation. It is used as one analytic tool, which, when combined with informed judgment, offers insight into the financial performance of a business.

For example, one business may have a completely different product mix than another company even though both operate in the same broad industry. To determine how well one company is doing relative to others, or to identify whether key indicators are changing, ratios are often compared to *industry averages*. To determine trends in one company's performance, ratios are often compared to past years' ratios of the same company.

[1] Any ratio in the form X:1 can be expressed as a percentage by multiplying both the numerator and denominator by 100. For example, a 0.25:1 ratio would equal 25% [$(0.25 \times 100)/(1 \times 100) = 25/100 = 25\%$]

To perform a comprehensive analysis, qualitative information about the company as well as ratios should be considered. For example, although a business may have sold hundreds of refrigerators last year and all of the key financial indicators suggest growth, qualitative information from trade publications and consumer reports may indicate that the trend will be towards refrigerators using significantly different technologies in the next few years. If the company does not have the capacity or necessary equipment to produce these new appliances, the present positive financial indicators may not accurately reflect the likely future financial performance of the company.

An examination of qualitative factors provides valuable insights and contributes to the comprehensive analysis of a company. An important source of qualitative information is also found in the notes to the financial statements, which are an integral part of the company's financial statements.

In this chapter, financial ratios will be used to provide insights into the financial performance of Big Dog Carworks Corp. (BDCC). The ratios will focus on financial information contained within the income statement, statement of changes in equity, and balance sheet of BDCC for the three years 2022, 2023, and 2024. This information is shown below. Note that figures in these statements are reported in thousands of dollars (000s). ***For consistency, all final calculations in this chapter are rounded to two decimal places.***

Big Dog Carworks Corp.
Balance Sheet
At December 31
($000s)

| | 2024 | 2023 | 2022 |
|---|---|---|---|
| *Assets* | | | |
| *Current* | | | |
| Cash | $ 20 | $ 30 | $ 50 |
| Short-term Investments | 36 | 31 | 37 |
| Accounts Receivable | 544 | 420 | 257 |
| Inventories | 833 | 503 | 361 |
| | 1,433 | 984 | 705 |
| *Property, Plant, and Equipment, net* | 1,053 | 1,128 | 712 |
| Total Assets | $ 2,486 | $ 2,112 | $ 1,417 |
| *Liabilities* | | | |
| *Current* | | | |
| Borrowings | $ 825 | $ 570 | $ 100 |
| Accounts Payable | 382 | 295 | $ 219 |
| Income Taxes Payable | 48 | 52 | $ 50 |
| | 1,255 | 917 | 369 |
| *Equity* | | | |
| Share Capital | 1,063 | 1,063 | 963 |
| Retained Earnings | 168 | 132 | 85 |
| | 1,231 | 1,195 | 1,048 |
| Total Liabilities and Equity | $ 2,486 | $ 2,112 | $ 1,417 |

Big Dog Carworks Corp.
Income Statement
For the Year Ended December 31
($000s)

| | *2024* | *2023* | *2022* |
|---|---|---|---|
| Sales (net) | $ 3,200 | $ 2,800 | $ 2,340 |
| Cost of Goods Sold | 2,500 | 2,150 | 1,800 |
| Gross Profit | 700 | 650 | 540 |
| *Operating Expenses* | | | |
| Selling, General, and Administration | 212 | 183 | 154 |
| Employee Benefits | 113 | 109 | 119 |
| Depreciation | 75 | 84 | 63 |
| | 400 | 376 | 336 |
| Income from Operations | 300 | 274 | 204 |
| *Financing Costs* | | | |
| Interest | 89 | 61 | -0- |
| Income Before Income Taxes | 211 | 213 | 204 |
| Income Taxes | 95 | 96 | 92 |
| Net Income | $ 116 | $ 117 | $ 112 |

Big Dog Carworks Corp.
Statement of Changes in Equity
For the Year Ended December 31
($000s)

| | *2024* | | | *2023* | *2022* |
|---|---|---|---|---|---|
| | *Share Capital* | *Retained Earnings* | *Total Equity* | *Total Equity* | *Total Equity* |
| Opening Balance | $1,063 | $132 | $1,195 | $1,048 | $ 43 |
| Common Shares Issued | | | | 100 | 953 |
| Net Income | | 116 | 116 | 117 | 112 |
| Dividends Declared | | (80) | (80) | (70) | (60) |
| Ending Balance | $1,063 | $168 | $1,231 | $1,195 | $1,048 |

Assume that 100,000 common shares are outstanding at the end of 2022, 2023, and 2024. Shares were issued in 2023, but at the end of year the number of outstanding shares was still 100,000.

There are four major types of financial ratios: a) *liquidity ratios* that measure the ability of a corporation to satisfy demands for cash as they arise in the near-term (such as payment of current liabilities); b) *profitability ratios* that measure various levels of return on sales, total assets employed, and shareholder investment; c) *leverage ratios* that measure the financial structure of a corporation, its amount of relative debt, and its ability to cover interest expense; and d) *market ratios* that measure financial returns to shareholders, and perceptions of the stock market about the corporation's value.

Initial insights into the financial performance of BDCC can be derived from an analysis of relative amounts of current and non-current debt. This analysis is addressed in the following sections.

## 12.2 Liquidity Ratios: Analyzing Short-term Cash Needs

### Current (Short-term) versus Non-current (Long-term) Debt

Short-term and long-term financing strategies both have their advantages. The advantage of some short-term debt (repayable within one year of the balance sheet date) is that it often does not require interest payments to creditors. For example, accounts payable may not require payment of interest if they are paid within the first 30 days they are outstanding. Short-term debt also has its disadvantages; payment is required within at least one year, and often sooner. Interest rates on short-term debt are often higher than on long-term debt. An increase in the proportion of short-term debt is more risky because it must be renewed and therefore renegotiated more frequently.

The advantages of long-term debt are that payment may be made over an extended period of time. Risk may be somewhat reduced through the use of a formal contractual agreement that is often lacking with short-term debt. The disadvantages of long-term debt are that interest payments must be made at specified times and the amounts owing may be secured by assets of the company.

### Analyzing Financial Structure

As a general rule, long-term financing should be used to finance long-term assets. Note that in BDCC's case, property, plant, and equipment assets amount to $1,053,000 at December 31, 2024 yet the firm has no long-term liabilities. This is unusual. An analysis of the company's balance sheet reveals the following:

| | | *(000s)* | |
|---|---|---|---|
| | *2024* | *2023* | *2022* |
| Current Liabilities | $1,255 | $917 | $369 |
| Non-current Liabilities | -0- | -0- | -0- |

2024 information indicates that BDCC's management relies solely on short-term creditor financing, part of which is $382,000 of accounts payable that may bear no interest and $825,000 of borrowings that also need to be repaid within one year. The risk is that management will likely need to replace current liabilities with new liabilities. If creditors become unwilling to do this, the ability of BDCC to pay its short-term creditors may be compromised. As a result, the company may experience a liquidity crisis — the inability to pay its current liabilities as they come due. The ratios used to evaluate liquidity of a corporation are discussed below.

Even though a company may be earning net income each year (as in BDCC's case), it may still be unable to pay its current liabilities as needed because of a shortage of cash. This can trigger various problems related to current and non-current liabilities and equity.

*Current Liabilities*

- Creditors can refuse to provide any further goods or services on account.
- Creditors can sue for payment.
- Creditors can put the company into receivership or bankruptcy.

*Non-current Liabilities*

- Long-term creditors can refuse to lend additional cash.
- Creditors can demand repayment of their long-term debts, under some circumstances.

*Equity*

- Shareholders may be unwilling to invest in additional share capital of the company.
- Shareholders risk the loss of their investments if the company declares bankruptcy.

There are several ratios that can be used to analyze the liquidity of a company.

## Working Capital

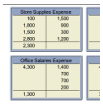
**Working capital** is the difference between a company's current assets and current liabilities at a point in time. BDCC's working capital calculation is as follows:

(000s)

| | *2024* | *2023* | *2022* |
|---|---|---|---|
| *Current Assets* | | | |
| Cash | $ 20 | $ 30 | $ 50 |
| Short-term Investments | 36 | 31 | 37 |
| Accounts Receivable | 544 | 420 | 257 |
| Inventories | 833 | 503 | 361 |
| Total Current Assets (a) | 1,433 | 984 | 705 |
| *Current Liabilities* | | | |
| Borrowings | 825 | 570 | 100 |
| Accounts Payable | 382 | 295 | 219 |
| Income Taxes Payable | 48 | 52 | 50 |
| Total Current Liabilities (b) | 1,255 | 917 | 369 |
| Net Working Capital (a-b) | $ 178 | $ 67 | $ 336 |

In the schedule above, working capital amounts to $178,000 at December 31, 2024. Between 2022 and 2024, working capital decreased by $158,000 ($336,000 – 178,000). BDCC is less liquid in 2024 than in 2022, though its liquidity position has improved since 2023 when it was only $67,000.

In addition to calculating an absolute amount of working capital, ratio analysis can also be used. The advantage of a ratio is that it is usually easier to interpret.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Working Capital.

## Current Ratio

Is BDCC able to repay short-term creditors? The **current ratio** can help answer this question. It expresses working capital as a proportion of current assets to current liabilities and is calculated as:

$$\frac{\text{Current assets}}{\text{Current liabilities}}$$

The relevant BDCC financial data required to calculate this ratio is taken from the balance sheet, as follows:

| | | (000s) | | |
|---|---|---|---|---|
| | | *2024* | *2023* | *2022* |
| Current Assets | (a) | $1,433 | $984 | $705 |
| Current Liabilities | (b) | 1,255 | 917 | 369 |
| Current Ratio | (a/b) | 1.14:1 | 1.07:1 | 1.91:1 |

This ratio indicates how many current asset dollars are available to pay current liabilities at a point in time. The expression “1.14:1” is read, “1.14 to 1.” In this case it means that at December 31, 2024, $1.14 of current assets exist to pay each $1 of current liabilities. This ratio is difficult to interpret in isolation. There are two types of additional information that could help. First, what is the trend within BDCC over the last three years? The ratio declined between 2022 and 2023 (from 1.91 to 1.07), then recovered slightly between the end of 2023 and 2024 (from 1.07 to 1.14). The overall decline may be a cause for concern, as it indicates that in 2024 BDCC had fewer current assets to satisfy current liabilities as they became due.

A second interpretation aid would be to compare BDCC’s current ratio to a similar company or that of BDCC’s industry as a whole. Information is available from various trade publications and business analysts’ websites that assemble financial ratio information for a wide range of industries.

Some analysts consider that a corporation should maintain a 2:1 current ratio, depending on the industry in which the firm operates. The reasoning is that, if there were $2 of current assets to pay each $1 of current liabilities, the company should still be able to pay its current liabilities as they become due, even in the event of a business downturn. However, it is recognized that no one current ratio is applicable to all entities; other factors — such as the composition of current assets — must also be considered to arrive at an acceptable ratio. This is illustrated below.

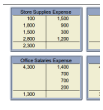
### Composition of Specific Items in Current Assets

In the following example, both Corporation A and Corporation B have a 2:1 current ratio. Are the companies equally able to repay their short-term creditors?

| | *Corp. A* | *Corp. B* |
|---|---|---|
| *Current Assets* | | |
| Cash | $ 1,000 | $ 10,000 |
| Accounts Receivable | 2,000 | 20,000 |
| Inventories | 37,000 | 10,000 |
| Total Current Assets | $ 40,000 | $ 40,000 |
| *Current Liabilities* | $ 20,000 | $ 20,000 |
| Current Ratio | 2:1 | 2:1 |

The companies have the same dollar amounts of current assets and current liabilities. However, they have different short-term debt paying abilities because Corporation B has more liquid current assets than does Corporation A. Corporation B has less inventory ($10,000 vs. $37,000) and more in cash and accounts receivable. If Corporation A needed more cash to pay short-term creditors quickly, it would have to sell inventory, likely at a lower-than-normal gross profit. So, Corporation B is in a better position to repay short-term creditors.

Since the current ratio doesn't consider the components of current assets, it is only a rough indicator of a company's ability to pay its debts as they become due. This weakness of the current ratio is partly remedied by the acid-test ratio discussed below.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Current Ratio.

## Acid-Test Ratio

A more rigid test of liquidity is provided by the **acid-test ratio**; also called the **quick ratio**. To calculate this ratio, current assets are separated into *quick* current assets and *non-quick* current assets.

*Quick Current Assets*

Cash
Short-term investments
Accounts Receivable

} These current assets are considered to be readily convertible into cash.

*Non-quick Current Assets*

Inventories
Prepaid Expenses

} Cash cannot be obtained either at all or easily from these current assets.

Inventory and prepaid expenses cannot be converted into cash in a short period of time, if at all. Therefore, they are excluded in the calculation of this ratio. The acid-test ratio is calculated as:

$$\frac{\text{Quick current assets}}{\text{Current liabilities}}$$

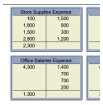
The BDCC information required to calculate this ratio is:

| | | (000s) | | |
|---|---|---|---|---|
| | | *2024* | *2023* | *2022* |
| Cash | | $ 20 | $ 30 | $ 50 |
| Short-term investments | | 36 | 31 | 37 |
| Accounts receivable | | 544 | 420 | 257 |
| Quick current assets | (a) | $ 600 | $ 481 | $ 344 |
| Current liabilities | (b) | $ 1,255 | $ 917 | $ 369 |
| Acid-test ratio | (a/b) | 0.48:1 | 0.52:1 | 0.93:1 |

This ratio indicates how many quick asset dollars exist to pay each dollar of current liabilities. What is an adequate acid-test ratio? It is generally considered that a 1:1 acid test ratio is adequate to ensure that a firm will be able to pay its current obligations. However, this is a fairly arbitrary guideline and is not appropriate in all situations. A lower ratio than 1:1 can often be found in successful companies. However, BDCC's acid-test ratio trend is worrisome.

There were $0.48 of quick assets available to pay each $1 of current liabilities in 2024. This amount appears inadequate. In 2023, the acid-test ratio of $0.52 also seems to be too low. The 2022 ratio of $0.93 is less than 1:1 but may be reasonable. Of particular concern to financial analysts would be BDCC's declining trend of the acid-test ratio over the three years.

Additional analysis can also be performed to determine the source of liquidity issues. These are discussed next.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Acid-test Ratio.

## Accounts Receivable Collection Period

Liquidity is affected by management decisions related to trade accounts receivable. Slow collection of receivables can result in a shortage of cash to pay current obligations. The effectiveness of management decisions relating to receivables can be analyzed by calculating the *accounts receivable collection period*.

The calculation of the **accounts receivable collection period** establishes the average number of days needed to collect an amount due to the company. It indicates the efficiency of collection procedures when the collection period is compared with the firm's sales terms (in BDCC's case, the sales terms are *net 30* meaning that amounts are due within 30 days of the invoice date).

The accounts receivable collection period is calculated as:

$$\frac{\text{Average net accounts receivable}^{2}}{\text{Net credit sales (or revenues)}} \times 365$$

The BDCC financial information required to make the calculation is shown below (the 2022 calculation cannot be made because 2021 Accounts Receivable amount is not available). Assume all of BDCC's sales are on credit.

| | | (000s) | |
|---|---|---|---|
| | | *2024* | *2023* |
| Net credit sales | (a) | $3,200 | $2,800 |
| Average accounts receivable [(Opening balance + closing balance)/2] | (b) | $ 482[3] | $ 338.5[4] |
| Average collection period [(b/a) × 365 days] | | 54.98 days | 44.13 days |

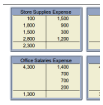
[2]Average balance sheet amounts are used when income statement amounts are compared to balance sheet amounts in a ratio. This is because the income statement item is realized over a fiscal year, while balance sheet amounts are recorded at points in time at the end of each fiscal year. Averaging opening and ending balance sheet amounts is an attempt to match numerators and denominators to an approximate midpoint in the fiscal year.

[3]($420 + 544)/2 = $482

[4]($257 + 420)/2 = $338.5

When Big Dog's 30-day sales terms are compared to the 54.98-day collection period, it can be seen that an average 24.98 days of sales (54.98 days – 30 days) have gone uncollected beyond the regular credit period in 2024. The collection period in 2024 is increasing compared to 2023. Therefore, some over-extension of credit and possibly ineffective collection procedures are indicated by this ratio. Quicker collection would improve BDCC's cash position. It may be that older or uncollectible amounts are buried in the total amount of receivables; this would have to be investigated.

Whether the increase in collection period is good or bad depends on several factors. For instance, more liberal credit terms may generate more sales (and therefore profits). The root causes of the change in the ratio need to be investigated. However, the calculation does provide an indication of the change in effectiveness of credit and collection procedures between 2023 and 2024.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Accounts Receivable Collection Period.

## Number of Days of Sales in Inventory

The effectiveness of management decisions relating to inventory can be analyzed by calculating the number of days of sales that can be serviced by existing inventory levels.

The **number of days of sales in inventory** is calculated by dividing average inventory by the cost of goods sold and multiplying the result by 365 days.

$$\frac{\text{Average merchandise inventory}}{\text{Cost of goods sold}} \times 365$$

The BDCC financial data for 2023 and 2024 required to calculate this ratio are shown below.

| | | (000s) | |
|---|---|---|---|
| | | *2024* | *2023* |
| Cost of goods sold | (a) | $2,500 | $2,150 |
| Average inventory [(Opening balance + closing balance)/2] | (b) | $ 668[5] | $ 432[6] |
| Cost of goods sold | | 365 | 365 |
| Number of days sales in inventory [(b/a) × 365 days] | | 97.53 days | 73.34 days |

The calculation indicates that BDCC is investing more in inventory in 2024 than in 2023 because there are 97.53 days of sales in inventory in 2024 versus 73.34 days in 2023. BDCC has approx-

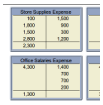
[5] ($503 + 833)/2 = $668
[6] ($361 + 503)/2 = $432

imately 3 months of sales with its existing inventory (98 days represents about 3 months). The increase from 2023 to 2024 may warrant investigation into its causes.

A declining number of days of sales in inventory is usually a sign of good inventory management because it indicates that the average amount of assets tied up in inventory is lessening. With lower inventory levels, inventory-related expenses such as rent and insurance are lower because less storage space is often required. However, lower inventory levels can have negative consequences since items that customers want to purchase may not be in inventory resulting in lost sales.

Increasing days of sales in inventory is usually a sign of poor inventory management because an excessive investment in inventory ties up cash that could be used for other purposes. Increasing levels may indicate that inventory is becoming obsolete (consider clothing) or deteriorating (consider perishable groceries). Obsolete and/or deteriorating inventories may be unsalable. However, the possible positive aspect of more days of sales in inventory is that there can be shorter delivery time to customers if more items are in stock.

Whether Big Dog's increasing days of sales in inventory is positive or negative depends on management's objectives. Is management increasing inventory to provide for increased sales in the next year, or is inventory being poorly managed? Remember that ratio analyses identify areas that require investigation. The resulting investigation will guide any required action.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Number of Days of Sales in Inventory Ratio.

## The Revenue Portion of the Operating Cycle

As discussed in Chapter 4, the sale of inventory and resulting collection of receivables are part of a business's operating cycle as shown in Figure 12.1.

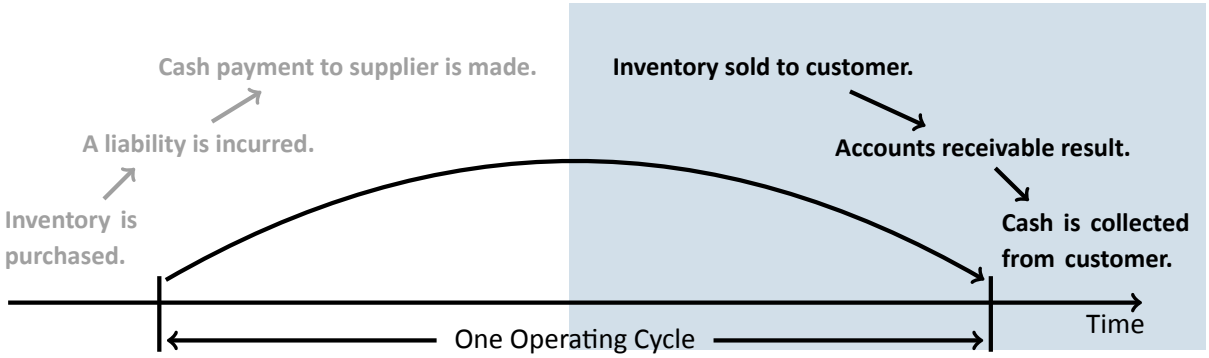



**Figure 12.1: Sales and Collection Portion of the Operating Cycle**

A business's **revenue operating cycle** is a subset of the operating cycle and includes the purchase

of inventory, the sale of inventory and creation of an account receivable, and the generation of cash when the receivable is collected. The length of time it takes BDCC to complete one revenue operating cycle is an important measure of liquidity and can be calculated by adding the number of days of sales in inventory plus the number of days it takes to collect receivables. The BDCC financial data required for this calculation follows.

| | *2024* | *2023* |
|---|---|---|
| Average number of days of sales in inventory | 97.53 days | 73.34 days |
| Average number of days to collect receivables | 54.98 days | 44.13 days |
| Number of days to complete the revenue cycle | 152.51 days | 117.47 days |

In 2024, 152.51 days were required to complete the revenue cycle, compared to 117.47 days in 2023. So, if accounts payable terms require payment within 60 days, BDCC may not be able to pay them because the number of days to complete the revenue cycle for both 2023 (117.47 days) and 2024 (152.51 days) are significantly greater than 60 days.

### Analysis of BDCC's Liquidity

Reflecting on the results of all the liquidity ratios, it appears that Big Dog Carworks Corp. is growing less liquid. Current assets, especially quick assets, are declining relative to current liabilities. The revenue operating cycle is increasing.

## 12.3 Profitability Ratios: Analyzing Operating Activities

*Profitability ratios* compare various expenses to revenues, and measure how well the assets of a corporation have been used to generate revenue.

### Gross Profit Ratio

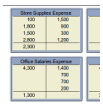
The **gross profit ratio**, as introduced briefly in Chapter 6, indicates the percentage of sales revenue that is left to pay operating expenses, creditor interest, and income taxes after deducting cost of goods sold. The ratio is calculated as:

$$\frac{\text{Gross profit}}{\text{Net sales}} \textit{ OR } \frac{\text{Gross profit}}{\text{Net sales}} \times 100$$

BDCC's gross profit ratios for the three years are:

| | | (000s) | | |
|---|---|---|---|---|
| | | *2024* | *2023* | *2022* |
| Gross profit | (a) | $ 700 | $ 650 | $ 540 |
| Net sales | (b) | $ 3,200 | $ 2,800 | $ 2,340 |
| Gross profit ratio | (a/b) | 0.2188:1 or 21.88% | 0.2321:1 or 23.21% | 0.2308:1 or or 23.08% |

In other words, for each dollar of sales BDCC has $0.22 of gross profit left to cover operating, interest, and income tax expenses ($0.23 in each of 2023 and 2022). The ratio has not changed significantly from year to year. However, even a small decline in this percentage can affect net income significantly because the gross profit is such a large component of the income statement. Changes in the gross profit ratio should be investigated, as it will impact future financial performance.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Gross profit ratio.

## Operating Profit Ratio

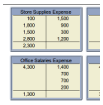
The **operating profit ratio** is one measure of relative change in these other expenses. This ratio indicates the percentage of sales revenue left to cover interest and income taxes expenses after deducting cost of goods sold and operating expenses. In other words:

$$\frac{\text{Income from operations}}{\text{Net sales}} \quad \textit{OR} \quad \frac{\text{Income from operations}}{\text{Net sales}} \times 100$$

BDCC's operating profit ratio for the 2022, 2023, and 2024 fiscal years is calculated as follows:

| | | (000s) | | |
|---|---|---|---|---|
| | | *2024* | *2023* | *2022* |
| Income from operations | (a) | $ 300 | $ 274 | $ 204 |
| Net sales | (b) | $ 3,200 | $ 2,800 | $ 2,340 |
| Operating profit ratio | (a/b) | 0.0938:1 or 9.38% | 0.0979:1 or 9.79% | 0.0872:1 or or 8.72% |

For each dollar of sales revenue in 2024, the company had $0.09 left to cover interest and income tax expenses after deducting cost of goods sold and operating expenses. A review of the company's operating expenses (selling, general, and administrative expenses; employee benefits, and depreciation) show that they have all increased. As a result, and despite increasing sales revenue and gross profit, operating income has remained relatively flat. Although it seems reasonable that an increase in operating expenses would follow an increase in sales, the reasons for the operating expense increases should be investigated.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Operating Profit Ratio.

## Net Profit Ratio

The **net profit ratio** is the percentage of sales revenue retained by the company after payment of operating expenses, interest expenses, and income taxes. It is an index of performance that can be used to compare the company to others in the same industry. This ratio is calculated by the following formula:

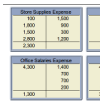
$$\frac{\text{Net income}}{\text{Net sales (or revenues)}} \quad \textit{OR} \quad \frac{\text{Net income}}{\text{Net sales (or revenues)}} \times 100$$

BDCC's net profit ratios for the three years are calculated as follows:

| | | (000s) | | |
|---|---|---|---|---|
| | | *2024* | *2023* | *2022* |
| Net income | (a) | $ 116 | $ 117 | $ 112 |
| Net sales | (b) | $ 3,200 | $ 2,800 | $ 2,340 |
| Net profit ratio | (a/b) | 0.0363:1 or 3.63% | 0.0418:1 or 4.18% | 0.0479:1 or or 4.79% |

For each $1 of sales in 2024, BDCC earned $0.04 of net income. The net profit ratio has been relatively stable but needs to be compared with industry or competitors' averages for a better perspective.

Recall that revenues are generated from a business's asset holdings. The financial strength and success of a corporation depends on the efficient use of these assets. An analysis of asset investment decisions can be made by calculating several ratios, and is discussed next.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Net Profit Ratio.

## Sales to Total Assets Ratio

Are BDCC's sales adequate in relation to its assets? The calculation of the sales to total assets ratio helps to answer this question by establishing the number of sales dollars earned for each dollar invested in assets. The ratio is calculated as:

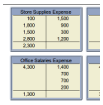
$$\frac{\text{Net sales}}{\text{Average total assets}} \textit{ OR } \frac{\text{Net sales}}{\text{Average total assets}} \times 100$$

BDCC's ratios are calculated as follows:

| | | (000s) | |
|---|---|---|---|
| | | *2024* | *2023* |
| Net sales | (a) | $ 3,200 | $ 2,800 |
| Average total assets | (b) | $ 2,299[7] | $ 1,764.50[8] |
| Sales to total assets ratio | (a/b) | 1.3919:1 or 139.19% | 1.5869:1 or 158.69% |

The ratio has decreased from 2023 to 2024. Each $1 of investment in assets in 2023 generated sales of $1.59. In 2024, each $1 of investment in assets generated only $1.39 in sales. Over the same period, BDCC's investment in assets increased. The ratios indicate that the additional assets are not producing revenue as effectively as in the past. It may be too soon to tell whether the increase in assets in 2023 will eventually create greater sales but an investigation is required.

As noted earlier, comparison with industry averages would be useful. A low ratio in relation to other companies in the same industry may indicate an over-investment in or inefficient use of assets by BDCC. On the other hand, a higher ratio in comparison to other companies would be a positive indicator.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Sales to Total Assets Ratio.

## Return on Total Assets Ratio (ROA)

The return on total assets ratio or ROA is designed to measure the efficiency with which all of a company's assets are used to produce income from operations. The ratio is calculated as:

$$\frac{\text{Income from operations}}{\text{Average total assets}} \textit{ OR } \frac{\text{Income from operations}}{\text{Average total assets}} \times 100$$

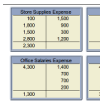
Note that expenses needed to finance the company operations are excluded from the calculation, specifically interest and income taxes. This is because all the assets of the company are considered in the ratio's denominator, whether financed by investors or creditors. Average Total Assets are used in the calculation because the amount of assets used likely varies during the year. The use of averages tends to smooth out such fluctuations.

[7] ($2,112 + 2,486)/2 = $2,299
[8] ($1,417 + 2,112)/2 = $1,764.50

BDCC's returns on total assets for 2023 and 2024 are calculated as follows:

| | | (000s) | |
|---|---|---|---|
| | | *2024* | *2023* |
| Income from operations | (a) | $ 300 | $ 274 |
| Average total assets | (b) | $ 2,299[9] | $ 1,764.50[10] |
| Return on total assets ratio | (a/b) | 0.1305:1 or 13.05% | 0.1553:1 or 15.53% |

The ratios indicate that Big Dog earned $0.13 of income from operations for every $1 of average total assets in 2024, a decrease from $0.16 per $1 in 2023. This downward trend indicates that assets are being used less efficiently. However, it may be that the increased investment in assets has not yet begun to pay off. On the other hand, although sales are increasing, it is possible that future sales volume will not be sufficient to justify the increase in assets. More information about the company's plans and projections would be useful. Recall that ratio analysis promotes the asking of directed questions for the purpose of more informed decision making.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Return on Total Assets Ratio.

## Return on Equity Ratio (ROE)

The return on equity ratio measures the return to shareholders — how much net income was earned for the owners of a business. It is calculated as:

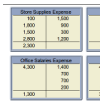
$$\frac{\text{Net income}}{\text{Average equity}} \; \textit{OR} \; \frac{\text{Net income}}{\text{Average equity}} \times 100$$

The 2023 and 2024 returns on equity ratios for BDCC are calculated as follows (note that the 2022 ratio is excluded because average equity cannot be calculated since 2021 ending balances are not provided):

| | | (000s) | |
|---|---|---|---|
| | | *2024* | *2023* |
| Net income | (a) | $ 116 | $ 117 |
| Average equity | (b) | $ 1,213[11] | $ 1,121.50[12] |
| Return on equity ratio | (a/b) | 0.0956:1 or 9.56% | 0.1043:1 or 10.43% |

[9] ($2,112 + 2,486)/2 = $2,299
[10] ($1,417 + 2,112)/2 = $1,764.50
[11] ($1,195 + 1,231)/2 = $1,213
[12] ($1,048 + 1,195)/2 = $1,121.50

In both years, shareholders earned, on average, $0.10 for every $1 invested in BDCC, or 10%. Industry averages could help with this analysis. For instance, if the industry as a whole earned only a 5% return on equity in 2024, it could be concluded that BDCC performed better than the industry average in terms of return on equity.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Return on Equity Ratio.

## 12.4 Leverage Ratios: Analyzing Financial Structure

The accounting equation expresses a relationship between assets owned by an entity and the claims against those assets. Although shareholders own a corporation, they alone do not finance the corporation; creditors also finance some of its activities. Together, creditor and shareholder capital are said to form the financial structureFinancial structure of a corporation. At December 31, 2024, the balance sheet of BDCC shows the following financial structure:

| ASSETS | = | LIABILITIES | + | EQUITY |
|---|---|---|---|---|
| $2,486 | = | $1,255 | + | $1,231 |

### Debt Ratio

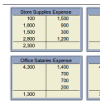
The proportion of total assets financed by debt is called the debt ratio, and is calculated by dividing total liabilities by total assets.

$$\frac{\text{Total liabilities}}{\text{Total assets}} \quad \textit{OR} \quad \frac{\text{Total liabilities}}{\text{Total assets}} \times 100$$

In BDCC's case, these amounts are:

| | | (000s) | |
|---|---|---|---|
| | | *2024* | *2023* |
| Total liabilities | (a) | $ 1,255 | $ 917 |
| Total assets | (b) | $ 2,486 | $ 2,112 |
| Debt ratio | (a/b) | 0.5048:1 or 50.48% | 0.4342:1 or 43.42% |

In other words, 50.48% of BDCC's assets are financed by debt. Therefore, because assets are financed by debt (aka liabilities) and equity, we intuitively know that 49.52% of BDCC's assets must be financed by equity which is the topic of the next section.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Debt Ratio.

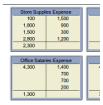
## Equity Ratio

The proportion of total assets financed by equity is called the equity ratio, and is calculated by dividing total equity by total assets. In BDCC's case, these amounts are:

| | | (000s) | |
|---|---|---|---|
| | | *2024* | *2023* |
| Total equity | (a) | $ 1,231 | $ 1,195 |
| Total assets | (b) | $ 2,486 | $ 2,112 |
| Equity ratio | (a/b) | 0.4952:1 or 49.52% | 0.5658:1 or 56.58% |

In 2024, 49.52% of the assets were financed by equity while in 2023 56.58% of the assets were financed by equity. Generally, this is considered an unfavourable trend because as equity financing decreases, we know that debt financing must be increasing as evidenced by the debt ratio above. The greater the debt financing, the greater the risk because principal and interest payments are part of debt financing.

Notice that the sum of the debt and equity ratios will always equal 100% because of the accounting equation relationship: A = L + E where A = 100% and, in the case of BDCC, L = 43.42% in 2023 and E = 56.58% in 2023.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Equity Ratio.

## Debt to Equity Ratio

The proportion of creditor to shareholders' claims is called the debt to equity ratio, and is calculated by dividing total liabilities by equity. In BDCC's case, these amounts are:

| | | (000s) | | |
|---|---|---|---|---|
| | | *2024* | *2023* | *2022* |
| Total liabilities | (a) | $ 1,255 | $ 917 | $ 369 |
| Equity | (b) | $ 1,231 | $ 1,195 | $ 1,048 |
| Debt to equity ratio | (a/b) | 1.02:1 | 0.77:1 | 0.35:1 |

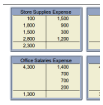
In other words, BDCC has $1.02 of liabilities for each dollar of equity at the end of its current fiscal year, 2024. The proportion of debt financing has been increasing since 2022. In 2022 there was

only $0.35 of debt for each $1 of equity. In 2024, creditors are financing a greater proportion of BDCC than are shareholders. This may be a cause for concern.

On the one hand, management's reliance on creditor financing is good. Issuing additional shares might require existing shareholders to give up some of their control of BDCC. Creditor financing may also be more financially attractive to existing shareholders if it enables BDCC to earn more with the borrowed funds than the interest paid on the debt.

On the other hand, management's increasing reliance on creditor financing increases risk because interest and principal have to be paid on this debt. Before deciding to extend credit, creditors often look at the total debt load of a company, and therefore the company's ability to meet interest and principal payments in the future. Total earnings of BDCC could be reduced if high interest payments have to be made, especially if interest rates rise. Creditors are interested in a secure investment and may evaluate shareholder commitment by measuring relative amounts of capital invested. From the creditors' perspective, the more capital invested by owners of the company, the greater the relative risk assumed by shareholders thus decreasing risk to creditors.

Although there is no single most appropriate debt to equity ratio, there are techniques for estimating the optimum balance. These are beyond the scope of introductory financial accounting. For now, it is sufficient to note that for BDCC the debt to equity ratio has increased considerably over the three-year period which is generally unfavourable because of the risk associated with debt financing.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Debt to Equity Ratio.

## Times Interest Earned Ratio

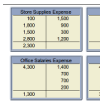
Creditors are interested in evaluating a company's financial performance, in order to project whether the firm will be able to pay interest on borrowed funds and repay the debt when it comes due. Creditors are therefore interested in measures such as the times interest earned ratio. This ratio indicates the amount by which income from operations could decline before a default on interest may result. The ratio is calculated by the following formula:

$$\frac{\text{Income from operations}}{\text{Interest expense}}$$

Note that income from operations is used, so that income before deduction of creditor payments in the form of income taxes and interest is incorporated into the calculation. BDCC's 2023 and 2024 ratios are calculated as follows:

| | | (000s) | | |
|---|---|---|---|---|
| | | *2024* | *2023* | *2022* |
| Income from operations | (a) | $ 300 | $ 274 | $ 204 |
| Interest expense | (b) | $ 89 | $ 61 | -0- |
| Times interest earned ratio | (a/b) | 3.37:1 | 4.49:1 | n/a |

The larger the ratio, the better creditors are protected. BDCC's interest coverage has decreased from 2023 to 2024 (3.37 times vs. 4.49 times), but income would still need to decrease significantly for the company to be unable to pay its obligations to creditors. The analysis does indicate, though, that over the past two years interest charges have increased compared to income from operations. Creditors need to assess company plans and projections, particularly those affecting income from operations, to determine whether their loans to the company are at risk. As discussed above, it may be that significant investments in assets have not yet generated related increases in sales and income from operations.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Times Interest Earned Ratio.

## 12.5 Market Ratios: Analysis of Financial Returns to Investors

Investors frequently consider whether to invest or divest in shares of a corporation. There are various ratios that help them make this decision. These are called market ratios, because the stock market plays an important role in allocating financial resources to corporations that offer their shares to the public.

### Earnings-per-Share (EPS)

Measures of efficiency can focus on shareholder returns on a per-share basis. That is, the amount of net income earned in a year can be divided by the number of common shares outstanding to establish how much return has been earned for each outstanding share. This earnings-per-share (EPS) value is calculated as:

$$\frac{\text{Net income}}{\text{Number of common shares outstanding}}$$

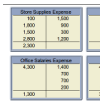
EPS is quoted in financial markets and is disclosed on the income statement of publicly-traded companies. If there are preferred shareholders, they have first rights to distribution of dividends. Therefore, when calculating EPS, preferred shareholders' claims on net income are deducted from net income to calculate the amount available for common shareholders:

$$\frac{\text{Net income} - \text{preferred share dividends}}{\text{Number of common shares outstanding}}$$

BDCC has no preferred shares and thus no preferred share dividends. Recall that 100,000 common shares are outstanding at the end of 2022, 2023, and 2024. For BDCC, EPS calculations for the three years are:

| | | (000s) | | |
|---|---|---|---|---|
| | | *2024* | *2023* | *2022* |
| Net income | (a) | $ 116 | $ 117 | $ 112 |
| Number of common shares outstanding | (b) | 100 | 100 | 100 |
| Earnings per share | (a/b) | $ 1.16 | $ 1.17 | $ 1.12 |

Big Dog's EPS has remained relatively constant over the three-year period because both net income and number of outstanding shares have remained fairly stable. Increasing sales levels and the resulting positive effects on net income, combined with unchanged common shares issued, has generally accounted for the slight increase from 2022 to 2023.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Earnings Per Share.

## Price-earnings (P/E) Ratio

A price at which a common share trades on a stock market is perhaps the most important measure of a company's financial performance. The market price of one share reflects the opinions of investors about a company's future value compared to alternative investments.

The earnings performance of common shares is often expressed as a price-earnings (P/E) ratio. Price-earnings (P/E) ratio It is calculated as:

$$\frac{\text{Market price per share}}{\text{Earnings per share}}$$

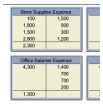
This ratio is used as an indicator of the market's expectation of a company's future performance. Assume Company A has a current market value of $15 per share and an EPS of $1 per share. It will have a P/E ratio of 15. If Company B has a market value of $4 per share and an EPS of $0.50 per share, it will have a P/E ratio of 8. This means that the stock market expects Company A to earn relatively more in the future than Company B. For every $1 of net income generated by Company A, investors are willing to invest $15. In comparison, for every $1 of net income generated by Company B, investors are willing to pay only $8. Investors perceive shares of Company A as more

valuable because the company is expected to earn greater returns in the future than is Company B.

Assume that BDCC's average market price per common share was $4 in 2022, $5 in 2023, and $6 in 2024. Its P/E ratio would be calculated as:

| | | (000s) | | |
|---|---|---|---|---|
| | | *2024* | *2023* | *2022* |
| Market price per common share | (a) | $ 6.00 | $ 5.00 | $ 4.00 |
| Earnings per share (see above) | (b) | $ 1.16 | $ 1.17 | $ 1.12 |
| Price-earnings ratio | (a/b) | 5.17 | 4.27 | 3.57 |

BDCC's P/E ratio has increased each year. Although industry and competitor's P/E ratio comparisons would be important to compare, BDCC's increasingly positive ratio also indicates that investors are "bullish" on BDCC. That is, the stock market indicates that it expects BDCC to be increasingly profitable in the coming years. Despite a relatively constant EPS ratio from 2022 to 2024, investors are willing to pay more and more for the company's common shares. This must be because future financial prospects are anticipated to be better than in the past three years.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Price-Earnings Ratio.

## Dividend Yield

Some investors' primary objective is to maximize dividend revenue from share investments, rather than realize an increasing market price of the shares. This type of investor is interested in information about the earnings available for distribution to shareholders and the actual amount of cash paid out as dividends rather than the market price of the shares.

The dividend yield ratio is a means to determine this. It is calculated as:

$$\frac{\text{Dividends per share}}{\text{Market price per share}}$$

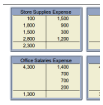
This ratio indicates how large a return in the form of dividends can be expected from an investment in a company's shares. The relevant information for BDCC over the last three years is shown in the financial statements, as follows:

| | | (000s – except per share values) | | |
|---|---|---|---|---|
| | | *2024* | *2023* | *2022* |
| Dividends declared | (a) | $ 80 | $ 70 | $ 60 |
| Outstanding common shares | (b) | 100 | 100 | 100 |
| Dividends per share | (a/b) | $ 0.80 | $ 0.70 | $ 0.60 |

The dividend yield ratio is therefore:

| | | *2024* | *2023* | *2022* |
|---|---|---|---|---|
| Dividends per share | (a) | $ 0.80 | $ 0.70 | $ 0.60 |
| Market price per share (given) | (b) | $ 6.00 | $ 5.00 | $ 4.00 |
| Dividend yield ratio | (a/b) | 0.13:1 | 0.14:1 | 0.15:1 |

The company's dividend yield ratio decreased from 2022 to 2024. In 2022, investors received $0.15 for every $1 invested in shares. By 2024, this had decreased to $0.13 for every $1 invested. Though the decline is slight, the trend may concern investors who seek steady cash returns. Also notice that total dividends declared increased from 2022 to 2024 even though net income did not substantially increase, and despite the company's poor liquidity position noted in an earlier analysis. Investors might ask why such high levels of dividends are being paid given this situation.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Dividend Yield.

## 12.6 Overall Analysis of Big Dog's Financial Statements

Results of ratio analysis are always more useful if accompanied by other information such as overall industry performance, the general economy, financial ratios of prior years, and qualitative factors such as analysts' opinions and management's plans.

However, there are some interpretations that can be made about BDCC from the foregoing ratio analyses even without other information. Although BDCC is experiencing growth in sales, net income has not substantially increased over the three-year period 2022 to 2024. The gross profit ratio is relatively constant. Their increasing operating expenses appear to be an issue. The sales to total assets and return on assets ratios have decreased due to a recent investment in property, plant and equipment assets and growth in current assets. Income from operations has not increased with the growth in the asset base. However, it may be premature to make conclusions regarding the timing of outlays for property, plant, and equipment.

The most immediate problem facing BDCC is the shortage of working capital and its poor liquidity. BDCC expanded its property, plant, and equipment in 2023 and experienced increases in revenue that did not correspond to increases in accounts receivable and inventories. The company should

therefore review its credit policies and monitor its investment in inventory to ensure that these expand in proportion to sales.

The plant expansion produced an increase in current liabilities (mainly borrowings). The company's ability to meet its debt obligations appears to be deteriorating. The ability of income from operations to cover interest expense has declined. The company's liquidity position is deteriorating, even though it continues to produce net income each year. BDCC should investigate alternatives to short-term borrowings, such as converting some of this to long-term debt and/or issuing additional share capital to retire some of its short-term debt obligations.

Despite these challenges, the stock market indicates that it expects BDCC to be increasingly profitable in the future. Perhaps it views the negative indicators noted above as only temporary or easily rectified by management.

The next section provides further insights into BDCC's operations through trend analysis of the company's financial statements.

## 12.7 Horizontal and Vertical Trend Analysis

LO2 – Describe horizontal and vertical trend analysis, and explain how they are used to analyze financial statements.

Trend analysis is the evaluation of financial performance based on a restatement of financial statement dollar amounts to percentages. Horizontal analysis and vertical analysis are two types of trend analyses.

**Horizontal analysis** involves the calculation of percentage changes from one or more years over the base year dollar amount. The base year is typically the oldest year and is always 100%. The following two examples of horizontal analysis use an abbreviated income statement and balance sheet information where 2022 represents the base year. ***For demonstration purposes, the percentages have been rounded to the nearest whole number.***

| | 2024 | | 2023 | | 2022 | |
|---|---|---|---|---|---|---|
| Sales[1] | $100 | 200% | $70 | 140% | $50 | 100% |
| Gross profit | $ 48 | 160% | $45 | 150% | $30 | 100% |
| Net income | $ 14 | 140% | $12 | 120% | $10 | 100% |

1. Sales in 2023 were 140% of 2022 sales calculated as ($70/$50)x100. Sales in 2024 were 200% of 2022 sales calculated as ($100/$50)x100.

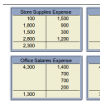
| | 2024 | | 2023 | | 2022 | |
|---|---|---|---|---|---|---|
| Current assets[2] | $ 18 | 90% | $ 22 | 110% | $ 20 | 100% |
| Long-term investments | $ -0- | N/A | $ 48 | 60% | $ 80 | 100% |
| Total assets | $252 | 105% | $228 | 95% | $240 | 100% |

2. Current assets in 2023 were 110% of 2022 current assets calculated as ($22/$20)x100. Current assets in 2024 were 90% of 2022 current assets calculated as ($18/$20)x100.

An alternate method of performing horizontal analysis calculations is to simply calculate the percentage change between two years as shown in the following example.

| | 2024 | % Change | 2023 |
|---|---|---|---|
| Sales[3] | $100 | 43% | $70 |
| Gross profit | $ 48 | 7% | $45 |
| Net income | $ 14 | 17% | $12 |

3. Sales in 2024 increased 43% over 2023 calculated as ($100–$70)=$30; ($30/$70)x100=43%.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Horizontal Analysis.

**Vertical analysis** requires numbers in a financial statement to be restated as percentages of a base dollar amount. For income statement analysis, the base amount used is sales. For balance sheet analysis, total assets, or total liabilities and equity, are used as the base amounts. When financial statements are converted to percentages, they are called common-size financial statements. The

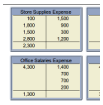
following two examples of vertical analysis use information from an abbreviated income statement and balance sheet.

| | *2024* | | *2023* | | *2022*[1] | |
|---|---|---|---|---|---|---|
| Sales | $100 | 100% | $70 | 100% | $50 | 100% |
| Gross profit | $ 48 | 48% | $45 | 64% | $30 | 60% |
| Net income | $ 14 | 14% | $12 | 17% | $10 | 20% |

1. 2022 Gross profit was 60% of Sales calculated as ($30/$50)x100; 2022 Net income was 20% of Sales calculated as ($10/$50)x100.

| | *2024* | | *2023* | | *2022*[2] | |
|---|---|---|---|---|---|---|
| Current assets | $ 18 | 7% | $ 22 | 10% | $ 20 | 8% |
| Long-term investments | $ -0- | N/A | $ 48 | 21% | $ 80 | 33% |
| Total assets | $252 | 100% | $228 | 100% | $240 | 100% |

2. 2022 Current assets were 8% of Total assets calculated as ($20/$240)x100. 2022 Long-term investments were 33% of Total assets calculated as ($80/$240)x100.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Vertical Analysis.

Notice that the same information was used for both the horizontal and vertical analyses examples but that the results are different because of how the dollar amounts are being compared.

Horizontal and vertical analyses of the balance sheets of Big Dog Carworks Corp. are as follows:

*Horizontal Analysis: Balance Sheet*

| | 2024 | | 2023 | | Change: Difference | | Change: Per Cent | |
|---|---|---|---|---|---|---|---|---|
| Current assets | $1,433 | (a) | $ 984 | (b) | +$449 | (a-b) | +45.6 | [(a-b)/b] |
| PPE assets | 1,053 | | 1,128 | | -75 | | -6.6 | |
| Total | $2,486 | | $2,112 | (c) | +$374 | | +17.7 | |
| Current liabilities | $1,255 | | $917 | | +$338 | | +36.9 | |
| Equity | 1,231 | | 1,195 | | +36 | | +3.0 | |
| Total | $2,486 | | $2,112 | | +$374 | | +17.7 | |

Notice the two columns introduced here. Analysis of the changes indicates a large increase in current assets (45.6%) together with a large increase in current liabilities (36.9%). There was a small decline in PPE assets (6.6%) and a small increase in equity (3%). The percentage change must always be interpreted together with the absolute dollar amount of change to avoid incorrect conclusions; percentage can sometimes be misleading.

*Vertical Analysis (Common-size):* Balance

| | % 2024 | % 2023 | |
|---|---|---|---|
| Current assets | 57.6 | 46.6 | (b/c) |
| PPE assets | 42.4 | 53.4 | |
| Total | 100.0 | 100.0 | |
| Current liabilities | 50.5 | 43.4 | |
| Equity | 49.5 | 56.6 | |
| Total | 100.0 | 100.0 | |

In the common-size balance sheet, the composition of the assets has changed with an overall shift to current assets in 2022 (57.6% vs. 46.6%). Also, an increase in the percentage of current liabilities has occurred, resulting in an overall shift from equity financing to debt financing from 2023 to 2024.

The same analysis of BDCC's income statement is as follows:

*Horizontal Analysis: Income Statements*

| | 2024 | | 2023 | | Change: Amount | | Change: Per Cent | |
|---|---|---|---|---|---|---|---|---|
| Sales | $3,200 | (a) | $2,800 | (b) | +$400 | (a-b) | +14 | [(a-b)/b] |
| Cost of Goods Sold | 2,500 | | 2,150 | | +$350 | | +16 | |
| Gross Profit | 700 | | 650 | (c) | +$ 50 | | +8 | |
| Expenses | 584 | | 533 | | +$ 51 | | +10 | |
| Net Income | $ 116 | | $ 117 | | -$ 1 | | -1 | |

Although sales and gross profit increased in dollar amounts, net income decreased slightly from 2023 to 2024 (1%). This net decrease resulted because cost of goods sold increased at a faster rate than sales (16% vs. 14%).

*Vertical Analysis (Common-size):* Income Statements

| | % 2024 | % 2023 | |
|---|---|---|---|
| Sales | 100 | 100 | (b/c) |
| Cost of Goods Sold | 78 | 77 | |
| Gross Profit | 22 | 23 | |
| Expenses | 18 | 19 | |
| Net Income | 4 | 4 | |

Notice the relative change in the components. For example, cost of goods sold increased in 2024 relative to sales (78% vs. 77%), while expenses in 2024 relative to sales decreased (18% vs. 19%). The overall changes were almost offsetting, as net income remained fairly stable.

The percentages calculated become more informative when compared to earlier years. Further analysis is usually undertaken in order to establish answers to the following questions:

| | |
|---|---|
| What caused this change?<br>Is this change favourable or unfavourable? | How do the percentages of this company compare with other companies in the same industry?<br>In other industries? |

These and similar questions call attention to areas that require further study. One item of note becomes more apparent as a result of the trend analysis above. Initially, it was stated that operating expenses were increasing between 2022 and 2024. Based on trend analysis, however, these expenses are actually declining as a percentage of sales. As a result, their fluctuations may not be as significant as first inferred. Conversely, the increases each year in cost of goods sold may be worrisome. Initial gross profit ratio calculations seemed to indicate little variation, and thus little effect on income from operations. The increase in cost of goods sold (78% vs. 77% of sales) may warrant further investigation.

The ratios covered in this chapter are summarized in Figure 12.2.

| **Analysis of liquidity:** | **Calculation of ratio:** | **Indicates:** |
|---|---|---|
| 1. Working Capital | Current assets – Current liabilities | The excess of current assets available after covering current liabilities (expressed as a dollar amount). |
| 2. Current ratio | $\frac{\text{Current assets}}{\text{Current liabilities}}$ | The amount of current assets available to pay current liabilities. |
| 3. Acid-test ratio | $\frac{\text{Quick current assets}}{\text{Current liabilities}}$ | Whether the company is able to meet the immediate demands of creditors. (This is a more severe measure of liquidity.) |
| 4. Accounts receivable collection period | $\frac{\text{Average net accounts receivable}}{\text{Net credit sales (or revenues)}} \times 365$ | The average time needed to collect receivables. |
| 5. Number of days of sales in inventory | $\frac{\text{Average inventory}}{\text{Cost of goods sold}} \times 365$ | How many days of sales can be made with existing inventory |
| 6. Revenue operating cycle | Average number of days to collect receivables + Average number of days of sales inventory | Length of time between the purchase of inventory and the subsequent collection of cash. |

| **Analysis of profitability:** | **Calculation of ratio:** | **Indicates:** |
|---|---|---|
| 1. Gross profit ratio | $\frac{\text{Gross profit}}{\text{Net sales}}$ | The percentage of sales revenue that is left to pay operating expenses, interest, and income taxes after deducting cost of goods sold. |
| 2. Operating profit ratio | $\frac{\text{Income from operations}}{\text{Net sales}}$ | The percentage of sales revenue that is left to pay interest and income taxes expenses after deducting cost of goods sold and operating expenses. |
| 3. Net profit ratio | $\frac{\text{Net income}}{\text{Net sales (or revenues)}} \times 100$ | The percentage of sales left after payment of all expenses. |
| 4. Sales to total assets ratio | $\frac{\text{Net sales}}{\text{Average total assets}}$ | The adequacy of sales in relation to the investment in assets. |
| 5. Return on total assets | $\frac{\text{Income from operations}}{\text{Average total assets}}$ | How efficiently a company uses its assets as resources to earn net income. |
| 6. Return on equity | $\frac{\text{Net income}}{\text{Average equity}}$ | The adequacy of net income as a return on equity. |
| **Leverage ratios:** | **Calculation of ratio:** | **Indicates:** |
| 1. Debt ratio | $\frac{\text{Total liabilities}}{\text{Total assets}}$ | The proportion of total assets financed by debt. |
| 2. Equity ratio | $\frac{\text{Total equity}}{\text{Total assets}}$ | The proportion of total assets financed by equity. |
| 3. Debt to equity ratio | $\frac{\text{Total liabilities}}{\text{Equity}}$ | The proportion of creditor financing to shareholder financing. |
| 4. Times interest earned ratio | $\frac{\text{Income from operations}}{\text{Interest expense}}$ | The ability of a company to pay interest to long-term creditors. |
| **Market ratios:** | **Calculation of ratio:** | **Indicates:** |
| 1. Earnings per share | $\frac{\text{Net income} - \text{Preferred share dividends}}{\text{Average number of common shares outstanding}}$ | The amount of net income that has been earned on each common share after deducting dividends to preferred shareholders. |
| 2. Price-earnings ratio | $\frac{\text{Market price per share}}{\text{Earnings per share}}$ | Market expectations of future profitability. |
| 3. Dividend yield ratio | $\frac{\text{Dividends per share}}{\text{Market price per share}}$ | The short-term cash return that can be expected from an investment in a company's shares. |

**Figure 12.2: Summary of Financial Statement Analysis Ratios**

Schematically, the various analytical tools can be illustrated as shown in Figure 12.3.

| Liquidity | | Profitability | | Financial Structure | Market Measures | Trend Analysis |
|---|---|---|---|---|---|---|
| *Short-term cash needs* | *Current asset performance* | *Returns on sales* | *Returns on balance sheet items* | | | |
| Current ratio | A/R collection period | Gross profit ratio | Sales to total assets ratio | Debt to equity ratio | Earnings per share | Horizontal |
| Acid-test ratio | Number of days of sales in inventory | Operating income ratio | Return on total assets | Times interest earned ratio | Price-earnings ratio | Vertical |
| | Revenue operating cycle | Net profit ratio | Return on equity | | Dividend yield ratio | |

**Figure 12.3: Categorization of Financial Statement Analytical Tools**

## Summary of Chapter 12 Learning Objectives

### LO1 – Describe ratio analysis, and explain how the liquidity, profitability, leverage, and market ratios are used to analyze and compare financial statements.

Ratio analysis measures the relative magnitude of two selected numerical values taken from a company's financial statements and compares the result to prior years and other similar companies. Financial ratios are an effective tool for measuring: (a) liquidity (current ratio, acid-test ratio, accounts receivable collection period, and number of days of sales in inventory); (b) profitability (gross profit ratio, operating profit ratio, net profit ratio, sales to total assets ratio, return on total assets, and return on equity); (c) leverage (debt ratio, equity ratio, debt to equity ratio, and times interest earned ratio); and (d) market ratios (earnings per share, price-earnings ratio, and dividend yield ratio). Ratios help identify the areas that require further investigation.

### LO2 – Describe horizontal and vertical trend analysis, and explain how they are used to analyze financial statements.

Horizontal analysis involves the calculation of percentage changes from one or more years over the base year dollar amount. The base year is typically the oldest year and is always 100%. Vertical analysis requires that numbers in a financial statement be restated as percentages of a base dollar amount. For income statement analysis, the base amount used is sales. For balance sheet

analysis, total assets, or total liabilities and equity, are used as the base amounts. When financial statements are converted to percentages, they are called common-size financial statements.

## Discussion Questions

1. Ratios need to be evaluated against some base. What types of information can be used to compare ratios against?
2. Explain what *liquidity* means. When a corporation is illiquid, what are the implications for shareholders? ...for creditors?
3. How is it possible that a corporation producing net income each year can be illiquid?
4. What ratios can be calculated to evaluate liquidity? Explain what each one indicates.
5. **a.** Define working capital. Distinguish between the current ratio and the acid-test ratio.
   **b.** "The current ratio is, by itself, inadequate to measure liquidity." Discuss this statement.
6. Two firms have the same amount of working capital. Explain how it is possible that one is able to pay off short-term creditors, while the other firm cannot.
7. Management decisions relating to accounts receivable and inventory can affect liquidity. Explain.
8. What is one means to evaluate the management of accounts receivable? ...inventory?
9. Discuss the advantages and disadvantages of decreasing number of days of sales in inventory.
10. What is the revenue operating cycle? How is its calculation useful in evaluating liquidity?
11. **a.** Identify and explain six ratios (and any associated calculations) that evaluate a corporation's profitability.
    **b.** What does each ratio indicate?
12. Why are analysts and investors concerned with the financial structure of a corporation?
13. Is the reliance on creditor financing good or bad? Explain its impact on net income.
14. Discuss the advantages and disadvantages of short-term debt financing compared to long-term debt financing.
15. Identify and explain ratios that evaluate financial returns for investors.
16. Distinguish between horizontal and vertical analyses of financial statements.

## Exercises

**EXERCISE 12–1 (LO1)**

The following are condensed comparative financial statements of Stockwell Inc. for the three years ended December 31, 2024.

Balance Sheet
At December 31

| | *2024* | *2023* | *2022* |
|---|---|---|---|
| *Assets* | | | |
| *Current* | | | |
| Cash | $ 21 | $ 8 | $ 17 |
| Accounts Receivable | 38 | 30 | 20 |
| Merchandise Inventory | 60 | 40 | 30 |
| Prepaid Expenses | 1 | 2 | 3 |
| Total Current Assets | 120 | 80 | 70 |
| *Property, plant and equipment assets,* at carrying amount | 260 | 150 | 76 |
| Total Assets | $380 | $230 | $146 |
| *Liabilities* | | | |
| *Current* | | | |
| Accounts Payable | $100 | $ 80 | $ 50 |
| *Non-current* | | | |
| Bonds Payable, 4% | 50 | 50 | -0- |
| | 150 | 130 | 50 |
| *Equity* | | | |
| Common Shares | 200 | 80 | 80 |
| Retained Earnings | 30 | 20 | 16 |
| | 230 | 100 | 96 |
| Total Liabilities and Equity | $380 | $230 | $146 |

Income Statement
For the Years Ended December 31

| | *2024* | *2023* | *2022* |
|---|---|---|---|
| Sales | $210 | $120 | $100 |
| Cost of Goods Sold | 158 | 80 | 55 |
| Gross Profit | 52 | 40 | 45 |
| Operating Expenses | 35 | 32 | 33 |
| Income from Operations | 17 | 8 | 12 |
| Interest Expense | 2 | 2 | -0- |
| Income before Income Taxes | 15 | 6 | 12 |
| Income Taxes | 5 | 2 | 4 |
| Net Income | $ 10 | $ 4 | $ 8 |

Additional information:

i. The company's accounts receivable at December 31, 2021 totalled $20.

ii. The company's merchandise inventory at December 31, 2021 totalled $20.

iii. The company's property, plant and equipment assets at December 31, 2021 totalled $70.

iv. Credit terms are net 60 days from date of invoice.

v. Number of common shares outstanding: 2022–80, 2023–80, 2024–400.

**Required**:

**a.** Calculate liquidity ratios and discuss.

**b.** What is your evaluation of

i. The financial structure of the corporation?

ii. The proportion of shareholder and creditor claims to its assets?

iii. The structure of its short-term and long-term credit financing?

**c.** What are some other observations you can make about the financial performance of Stockwell?

---

**EXERCISE 12–2 (LO1)**

The following information relates to three companies in the same industry:

| *Company* | *Latest market price* | *Earnings per share* | *Dividends per share* |
|---|---|---|---|
| A | $ 35 | $ 11 | $ -0- |
| B | 40 | 5 | 4 |
| C | 90 | 10 | 6 |

**Required**: Explain and calculate the price-earnings and dividend yield ratios. On the basis of only the foregoing information, which company represents the most attractive investment opportunity to you? Explain.

---

**EXERCISE 12–3 (LO1)**

Consider the following information:

Salinas Limited
Balance Sheet
At December 31, 2023

| *Assets* | | *Liabilities and Equity* | |
|---|---|---|---|
| Cash | $ 72 | Accounts Payable | $ 60 |
| Accounts Receivable | 88 | Bank Loan, non-current | 150 |
| Merchandise Inventory | 100 | | |
| Prepaid Expenses | 40 | Preferred Shares | 60 |
| Property, Plant, and Equipment, | | Common Shares | 250 |
| at carrying amount | 320 | Retained Earnings | 100 |
| Total Assets | $620 | Total Liabilities and Equity | $620 |

Salinas Limited
Income Statement
For the Year Ended December 31, 2023

| | | |
|---|---|---|
| Sales | | $240 |
| Cost of Goods Sold | | 144 |
| Gross Profit | | 96 |
| *Operating Expenses* | | |
| Salaries | $ 44 | |
| Depreciation | 6 | 50 |
| Income from Operations | | 46 |
| *Less*: Interest | | 8 |
| Income before Income Taxes | | 38 |
| *Less*: Income Taxes | | 18 |
| Net Income | | $ 20 |

Assume that 80% of sales are on credit, that the average of all balance sheet items is equal to the year-end figure, that all preferred share dividends have been paid and the total annual preferred dividend entitlement is $6, and that the number of common shares outstanding is 10.

**Required**: Calculate the following ratios and percentages

**a.** Current ratio

**b.** Return on total assets

**c.** Sales to total assets

**d.** Acid-test ratio

**e.** Times interest earned

**f.** Earnings per common share

**g.** Accounts receivable collection period

**h.** Return on equity

---

**EXERCISE 12–4 (LO2)**

The following data are taken from the records of Cronkite Corp.:

| | *2024* | *2023* |
|---|---|---|
| Sales | $2,520 | $1,440 |
| Cost of Goods Sold | 1,890 | 960 |
| Gross Profit | 630 | 480 |
| Other Expenses | 510 | 430 |
| Net Income | $ 120 | $ 50 |

**Required**: Perform horizontal analysis on the above date and interpret your results.

---

**EXERCISE 12–5 (LO2)**

Assume you are an accountant analysing Escalade Corporation. Escalade has expanded its production facilities by 200% since 2022. Its income statements for the last three years are as follows:

Escalade Corporation
Comparative Income Statements
For the Years Ending December 31

| | *2024* | *2023* | *2022* |
|---|---|---|---|
| Sales | $250 | $150 | $120 |
| Cost of Goods Sold | 190 | 100 | 60 |
| Gross Profit | 60 | 50 | 60 |
| Other Expenses | 35 | 34 | 35 |
| Net Income | $ 25 | $ 16 | $ 25 |

**Required**:

**a.** Prepare a vertical analysis of Escalade Corporation's income statement for the three years.

**b.** What inferences can be drawn from this analysis?

---

**EXERCISE 12–6 (LO1)**

The following information is taken from the partial balance sheet of Quail Productions Corp.

| | 2023 | 2022 |
|---|---|---|
| *Current assets* | | |
| Cash | $ 10 | $ 15 |
| Marketable investments | 35 | 35 |
| Accounts receivable | 200 | 150 |
| Inventory | 600 | 400 |
| *Current liabilities* | | |
| Accounts payable | 500 | 400 |
| Borrowings | 245 | 180 |

**Required**:

**a.** Describe the purpose of and calculate the current ratio for each year.

**b.** Describe the purpose of and calculate the acid-test ratio for both years.

**c.** What observations can you make from a comparison of the two types of ratios?

---

**EXERCISE 12–7 (LO1)**

The following information is taken from the records of Black Spruce Co. Ltd.:

| | *2024* | *2023* | *2022* |
|---|---|---|---|
| Sales | $252 | $141 | $120 |
| Gross profit | 63 | 48 | 54 |
| Net income | 12 | 5 | 15 |

**Required**: Analyse the gross profit and net profit ratios using the above data. Comment on any trends that you observe.

---

**EXERCISE 12–8 (LO1)**

In the left-hand column, a series of independent transactions is listed. In the right-hand column, a series of ratios is listed.

| *Transaction* | *Ratio* | *Effect on ratio* |
|---|---|---|
| Declared a cash dividend | Current ratio | |
| Wrote-off an uncollectible account receivable | Accounts receivable collection period | |
| Purchased inventory on account | Acid-test ratio | |
| Issued 10-year bonds to acquire property, plant, and equipment | Return on total assets | |
| Issued additional shares for cash | Debt to shareholders' equity ratio | |
| Declared a share dividend on common shares | Earnings per share | |
| Purchased supplies on account | Current ratio | |
| Paid a current creditor in full | Acid-test ratio | |
| Paid an account payable | Number of days of sales in inventory | |

**Required**: For each transaction indicate whether the ratio will increase (I), decrease (D), or remain unchanged (No Change). Assume all ratios are greater than 1:1 before each transaction where applicable.

---

**EXERCISE 12–9 (LO1)**

Consider the following financial statement data:

| *Balance Sheet* | |
|---|---|
| Cash | $ 20 |
| Accounts receivable | 20 |
| Merchandise inventory | 40 |
| Plant, at carrying amount | 140 |
| | $220 |
| | |
| Accounts payable | $ 20 |
| Non-current borrowings | 60 |
| Common shares (8 shares issued) | 80 |
| Retained earnings | 60 |
| | $220 |

| *Income Statement* | |
|---|---|
| Sales | $100 |
| Cost of goods sold | 50 |
| Gross profit | 50 |
| Operating expenses | 14 |
| Income from operations | 36 |
| *Less:* Interest | 6 |
| Income before income taxes | 30 |
| *Less:* Income taxes | 10 |
| Net income | $ 20 |

Assume that the average of all balance sheet items is equal to the year-end figure and that all sales are on credit.

**Required**:

**a.** Calculate the following ratios:

i. Return on total assets (assume interest has been paid)
ii. Return on shareholders' equity
iii. Times interest earned ratio
iv. Earnings per share
v. Number of days of sales in inventory
vi. Accounts receivable collection period
vii. Sales to total assets ratio
viii. Current ratio
ix. Acid-test ratio
x. Debt to shareholders' equity ratio.

**b.** Which of these ratios are measures of liquidity?

---

**EXERCISE 12–10 (LO1)**

Assume a company has the following financial information:

| | |
|---|---|
| Cash and short-term investments | $ 6 |
| Prepaid expenses | -0- |
| Capital assets | 90 |
| Total liabilities | 40 |
| Shareholders' equity | 140 |
| Sales | 420 |
| Credit sales | 300 |
| Current ratio | 2.5:1 |
| Acid-test ratio | 1:1 |
| Gross profit ratio | 30% |

Assume current assets consist of cash, short-term investments, accounts receivable, inventory, and prepaid expenses, and that ending balances are the same as average balances for the year.

**Required**: Calculate

**a.** Current liabilities

**b.** Inventory

**c.** Accounts receivable collection period

**d.** Number of days of sales in inventory

**e.** Revenue operating cycle

---

**EXERCISE 12–11 (LO1)**

A company began the month of May with $200,000 of current assets, a 2.5 to 1 current ratio, and a 1.25 to 1 acid-test ratio. During the month, it completed the following transactions:

| | *Transaction* | *Effect on current ratio* |
|---|---|---|
| i. | Bought $20,000 of merchandize on account (the company uses a perpetual inventory system) | |
| ii. | Sold for $10,000 cash, merchandize that cost $5,000 | |
| iii. | Collected a $2,500 account receivable | |
| iv. | Paid a $10,000 account payable | |
| v. | Wrote off a $1,500 bad debt against the allowance for doubtful accounts | |
| vi. | Declared a $1 per-share cash dividend on the 10,000 outstanding common shares | |
| vii. | Paid the dividend declared above | |
| viii. | Borrowed $10,000 from a bank by assuming a 60-day, 10-per cent loan | |
| ix. | Borrowed $25,000 from a bank by placing a 10-year mortgage on the plant | |
| x. | Used the $25,000 proceeds of the mortgage to buy additional machinery | |

**Required**:

**a.** Indicate the effect on current ratio assuming each transaction is independent of the others: Increase, Decrease, or No Change.

**b.** At the end of May, and taking all the above transactions into account, what was the current ratio and acid-test ratio?

Use the following format. The opening current ratio calculation and effects of the first transaction are provided:

Current ratio:

| *In thousands of dollars* | | *Bal May 1* | *i* | *ii* | *iii* | *iv* | *v* | *vi* | *vii* | *vii* | *ix* | *x* | *Bal May 31* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Current assets | x | 200 | +20 | | | | | | | | | | |
| Current liabilities | y | 80 | +20 | | | | | | | | | | |
| Current ratio | x/y | 2.5 | | | | | | | | | | | |

Acid-test ratio:

| *In thousands of dollars* | | *Bal May 1* | *i* | *ii* | *iii* | *iv* | *v* | *vi* | *vii* | *viii* | *ix* | *x* | *Bal May 31* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Quick assets | x | | | | | | | | | | | | |
| Current liabilities | y | | | | | | | | | | | | |
| Acid-test ratio | x/y | | | | | | | | | | | | |

## Problems

---

**PROBLEM 12–1 (LO1)**

Belafonte Corporation's books were destroyed in a fire on April 20, 2023. The comptroller of the corporation can only remember a few odd pieces of information:

a. The current ratio was 3.75 to 1.

b. Sales for the year were $73,000.

c. Inventories were $20,000 and were equal to property, plant and equipment at carrying amount, and also equal to bonds payable.

d. The accounts receivable collection period was 40 days.

e. The bonds payable amount was 10 times cash.

f. Total current assets were twice as much as common shares.

**Required**: Using this information, prepare Belafonte Corporation's balance sheet at April 30, 2023. Assume balances at April 30, 2023 are the same as average balances for the year then ended, and besides retained earnings, there are no accounts other than those mentioned above.

---

**PROBLEM 12–2 (LO1)**

The incomplete balance sheet of Hook Limited is given below.

Hook Limited
Balance Sheet
At December 31, 2023

| | | |
|---|---|---|
| *Assets* | | |
| *Current* | | |
| Cash | $30,000 | |
| Accounts Receivable | ? | |
| Merchandise Inventory | ? | |
| | | $ ? |
| *Property, plant and equipment assets* | ? | |
| *Less*: Accumulated Depreciation | 100,000 | ? |
| Total Assets | | $ ? |
| *Liabilities* | | |
| *Current* | | |
| Accounts Payable | $50,000 | |
| Accrued Liabilities | ? | |
| | | $120,000 |
| *Non-current* | | |
| 8% Bonds Payable | | ? |
| *Equity* | | |
| Common Shares | | ? |
| Retained Earnings | | ? |
| Total Liabilities and Equity | | $ ? |

Additional information for 2023 year-end:

a. The amount of working capital is $150,000.

b. The issued value of the shares is $10 per share.

c. Market price per share is $15.

d. Price-earnings ratio is 3.

e. Income before payment of interest and income tax is $80,000.

f. The ratio of shareholder's equity to total assets is 0.60 to 1.

g. Income tax expense equals $30,000.

h. The acid-test ratio is 1.5 to 1.

i. The times interest earned ratio is 8 to1.

**Required**: Complete Hook Limited's balance sheet.

# Chapter 13

# Proprietorships and Partnerships

Chapter 1 introduced the three forms of business organizations — corporations, proprietorships, and partnerships. The corporation has been the focus in Chapters 1 through 12. This chapter will expand on some of the basic accounting concepts as they apply to proprietorships and partnerships.

## Chapter 13 Learning Objectives

LO1 – Describe the characteristics of a proprietorship, including how its financial statements are different from those of a corporation.

LO2 – Describe the characteristics of a partnership including how its financial statements are different from those of a corporation.

## Concept Self-Check

Use the following questions as a self-check while working through Chapter 13.

1. What are some of the characteristics of a proprietorship, that are different from those of a corporation?
2. What is the journal entry to record the investment of cash by the owner into a proprietorship?
3. How are the closing entries for a proprietorship different than those recorded for a corporation?
4. Why is there only one equity account on a sole proprietorship's balance sheet and multiple accounts in the equity section of a corporate balance sheet?
5. What is mutual agency as it relates to a partnership?
6. How is a partnership different than a corporation?

**NOTE:** The purpose of these questions is to prepare you for the concepts introduced in the chapter. Your goal should be to answer each of these questions as you read through the chapter. If,

when you complete the chapter, you are unable to answer one or more the Concept Self-Check questions, go back through the content to find the answer(s). Solutions are not provided to these questions.

## 13.1 Proprietorships

LO1 – Describe the characteristics of a proprietorship including, how its financial statements are different from those of a corporation.

As discussed in Chapter 1, a proprietorship is a business owned by one person. It is not a separate legal entity, which means that the business and the owner are considered to be the same entity. As a result, for example, from an income tax perspective, the profits of a proprietorship are taxed as part of the owner's personal income tax return. Unlimited liability is another characteristic of a proprietorship meaning that if the business could not pay its debts, the owner would be responsible even if the business's debts were greater than the owner's personal resources.

### Investing in a Proprietorship

When the owners of a corporation, known as shareholders, invest in the corporation, shares are issued. The shares represent how much of the corporation is owned by each shareholder. In a proprietorship, there is only one owner. When that owner invests in their business, the journal entry is:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Cash . . . . . | | XXX | |
| | Owner's Capital . . . . . | | | XXX |
| | To record the owner's investment into their business. | | | |

### Distribution of Income in a Proprietorship — Withdrawals

A corporation distributes a portion of income earned to its owners, the shareholders, in the form of dividends. In a proprietorship, the owner distributes a portion of the business's income to her/himself in the form of **withdrawals**. Typically, the owner will withdraw cash but they can withdraw other assets as well. The journal entry to record a cash withdrawal is:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Withdrawals . . . . . | | XXX | |
| | Cash . . . . . | | | XXX |
| | To record the owner's withdrawal of cash. | | | |

## Closing Entries for a Proprietorship

The closing entries for a corporation involved four steps:

***Entry 1: Close the revenue accounts to the Income Summary account***

This would be identical for a proprietorship.

***Entry 2: Close the expense accounts to the Income Summary account***

This would also be identical for a proprietorship.

***Entry 3: Close the income summary to retained earnings***

Instead of closing the balance in the income summary to retained earnings, a proprietorship would close the income summary to the Owner's Capital account.

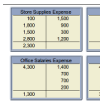
***Entry 4: Close dividends to retained earnings***

The equivalent to dividends for a proprietorship is withdrawals. There is no Retained Earnings account in a proprietorship. A corporation separates investments made by the owners (shareholders) into a Share Capital account while dividends and accumulated net incomes/losses are recorded in retained earnings. In a proprietorship, all owner investments, withdrawals, and net incomes/losses are maintained in the Owner's Capital account. Therefore, the fourth closing entry for a proprietorship closes withdrawals to this Owner's Capital account.

Figure 13.1 compares the closing entries for a proprietorship and a corporation.

| Proprietorship | | | Corporation | | |
|---|---|---|---|---|---|
| **Entry 1: Close the revenue accounts to the Income Summary account.** | | | | | |
| Revenues | XXX | | Revenues | XXX | |
| Income Summary | | XXX | Income Summary | | XXX |
| **Entry 2: Close the expense accounts to the Income Summary account.** | | | | | |
| Income Summary | XXX | | Income Summary | XXX | |
| Expenses | | XXX | Expenses | | XXX |
| **Entry 3: Close the Income Summary account …to the Owner's Capital account.** | | | **…to the Retained Earnings account.** | | |
| Income Summary | XXX | | Income Summary | XXX | |
| Owner's Capital | | XXX | Retained Earnings | | XXX |
| *When there is a net income.* | | | *When there is a net income.* | | |
| ***OR*** | | | ***OR*** | | |
| Owner's Capital | XXX | | Retained Earnings | XXX | |
| Income Summary | | XXX | Income Summary | | XXX |
| *When there is a net loss.* | | | *When there is a net loss.* | | |
| **Entry 4: Close …withdrawals to the Owner's Capital account.** | | | **…dividends to the Retained Earnings account.** | | |
| Owner's Capital | XXX | | Retained Earnings | XXX | |
| Withdrawals | | XXX | Dividends | | XXX |

**Figure 13.1: Comparing Closing Entries for a Proprietorship and Corporation**



An exploration is available on the Lyryx site. Log into your Lyryx course to run Closing Entries.

## Financial Statements

The financial statements for a proprietorship are much the same as for a corporation with some minor differences. As shown in Figure 13.2, the income statements only differ in that the proprietorship does not include income tax expense since its profits are taxed as part of the owner's personal income tax return.

**Proprietorship**

ABC Consulting
Income Statement
Year ended December 31, 2023

| | | |
|---|---|---|
| Revenues | | $400 |
| Operating expenses | | 180 |
| Income from operations | | $220 |
| Other revenues and expenses | | |
| Interest revenue | $20 | |
| Loss on sale of equipment | (5) | 15 |
| Net income | | $235 |

**Corporation**

ABC Inc.
Income Statement
Year ended December 31, 2023

| | | |
|---|---|---|
| Revenues | | $400 |
| Operating expenses | | 180 |
| Income from operations | | $220 |
| Interest revenue | $20 | |
| Loss on sale of equipment | (5) | |
| | | 15 |
| Income before tax | | $235 |
| Income tax expense | | 50 |
| Net income | | $185 |

**Figure 13.2: Comparing the Income Statement for a Proprietorship and for a Corporation**

The statement of changes in equity for each of a proprietorship and corporation includes the same elements: beginning equity, additional investments by the owner(s), net income/loss, distribution of income to the owner(s), and the ending balance in equity. However, the statements are structured differently because in a proprietorship, all the equity items are combined in one account, the Owner's Capital account. In a corporation, equity is divided between share capital and retained earnings. These differences are illustrated in Figure 13.3.

**Proprietorship**

ABC Consulting
Statement of Changes in Equity
Year ended December 31, 2023

| | | |
|---|---|---|
| Owner's capital, January 1, 2023 | | $12,000 |
| Add: Owner investment | $1,000 | |
| Net income | 235 | 1,235 |
| Total | | $13,235 |
| Less: Withdrawals | | 150 |
| Owner's capital, December 31, 2023 | | $13,085 |

**Corporation**

ABC Inc.
Statement of Changes in Equity
Year ended December 31, 2023

| | Share Capital | Retained Earnings | Total Equity |
|---|---|---|---|
| Balance, January 1, 2023 | $9,000 | $3,000 | $12,000 |
| Issuance of share capital | 1,000 | | 1,000 |
| Net income/loss | | 185 | 185 |
| Dividends | | (150) | (150) |
| Balance, December 31, 2023 | $10,000 | $3,035 | $13,035 |

**Figure 13.3: Comparing the Statement of Changes in Equity for a Proprietorship and for a Corporation**

Although both statements are based on identical dollar amounts, notice that the total equity at December 31, 2023 for the proprietorship is $13,085 which is $50 more than the $13,035 shown for the corporation. The $50 difference is the income tax expense deducted on the corporation's income tax.

The balance sheet for each of a proprietorship and corporation includes the same elements: assets, liabilities, and equity. However, the equity section of the statement differs because in a proprietorship, all the equity items are combined in one account, the owner's capital account. In a corporation, equity is divided between share capital and retained earnings. These differences are illustrated in Figure 13.4.

**Proprietorship**

ABC Consulting
Balance Sheet
December 31, 2023

| | |
|---|---|
| Assets | |
| Cash | $ 4,000 |
| Other assets | 86,000 |
| Total assets | $90,000 |
| Liabilities | $76,915 |
| Equity | |
| Owner's capital | 13,085 |
| Total liabilities and equity | $90,000 |

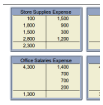
**Corporation**

ABC Inc.
Balance Sheet
December 31, 2023

| | | |
|---|---|---|
| Assets | | |
| Cash | | $ 3,950 |
| Other assets | | 86,000 |
| Total assets | | $89,950 |
| Liabilities | | $76,915 |
| Equity | | |
| Share capital | $10,000 | |
| Retained earnings | 3,035 | |
| Total equity | | 13,035 |
| Total liabilities and equity | | $89,950 |

**Figure 13.4: Comparing the Balance Sheet for a Proprietorship and for a Corporation**

The $50 difference between the proprietorship's and corporation's balances in each of cash and total equity is because the corporation paid $50 income tax which the proprietorship is not subject to. The equity sections of the two balance sheets are different only in terms of the types of accounts used.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Financial Statements.

## 13.2 Partnerships

LO2 – Describe the characteristics of a partnership, including how its financial statements are different from
those of a corporation.

As discussed in Chapter 1, a partnership is a business owned by more than one person. Partners should have a partnership contract that details their agreement on things such as each partner's rights and duties, the sharing of incomes/losses and withdrawals, as well as dispute and termination procedures. A partnership is not a separate legal entity, which means that the business and the partners are considered to be the same entity. As a result, for example, from an income tax perspective, each partner's share of the profits is taxed as part of that partner's personal income tax return. Unlimited liability is another characteristic of a partnership, meaning that if the business could not pay its debts, the partners would be responsible even if the business's debts were greater than their personal resources.

The exception to this would be the formation of a **limited liability partnership (LLP)** that that is permitted for professionals such as lawyers and accountants. In an LLP, the **general partner(s)** is/are responsible for the management of the partnership and assume(s) unlimited liability, while the **limited partners** have limited liability but also limited roles in the partnership as specified in the partnership agreement. Partnerships also have a limited life and are subject to *mutual agency*. **Mutual agency** means that a partner can commit the partnership to any contract because each partner is an authorized agent of the partnership. For example, one partner could sign a contract to purchase merchandise that falls within the scope of the business's operations.

### Investing in a Partnership

Recall that when the owners of a corporation, known as shareholders, invest in the corporation, shares are issued. Recall as well that in a proprietorship there is only one owner whose investments into the business are credited to their capital account. A partnership is similar to a proprietorship in that each partner's investment into the business is credited to an owner's capital account. The difference is that in a partnership there will be more than one owner's capital account. For example, assume Doug Wharton, Lisa Bartwiz, and Tahanni Butti started a partnership called WBB Consulting and invested cash of $20,000, $15,000, and $40,000, respectively. The journal entry to record the investment is:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Cash . . . . . | | 75,000 | |
| | Wharton, Capital . . . . . | | | 20,000 |
| | Bartwiz, Capital . . . . . | | | 15,000 |
| | Butti, Capital . . . . . | | | 40,000 |
| | To record each partner's investment into the business. | | | |

## Distribution of Income in a Partnership — Withdrawals

Recall that a corporation distributes a portion of income earned to its owners, the shareholders, in the form of dividends. In a proprietorship and partnership, the owner/partners distribute a portion of the income to themselves in the form of withdrawals. Assume Wharton, Bartwiz, and Butti each withdraw $5,000. The journal entry is:

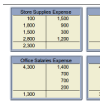
| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Wharton, Withdrawals . . . . . | | 5,000 | |
| | Bartwiz, Withdrawals . . . . . | | 5,000 | |
| | Butti, Withdrawals . . . . . | | 5,000 | |
| | Cash . . . . . | | | 15,000 |
| | To record the partners' withdrawal of cash. | | | |

## Closing Entries for a Partnership

The closing entries for a partnership are much the same as those for a proprietorship except that for a partnership there is more than one withdrawals account and more than one capital account. The only complexity with the closing entries for a partnership is with closing the Income Summary account to the capital accounts. The complexity stems from the partnership agreement which details how incomes/losses are to be allocated. Let us review several scenarios.

**Example 1:** Assume WBB Consulting earned $60,000 during the year and the partnership agreement stipulates that incomes/losses are to be allocated equally. The journal entry to close the income summary to the partners' capital accounts would be:

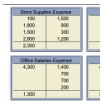
| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Income Summary . . . . . | | 60,000 | |
| | Wharton, Capital . . . . . | | | 20,000 |
| | Bartwiz, Capital . . . . . | | | 20,000 |
| | Butti, Capital . . . . . | | | 20,000 |
| | To close the income summary based on equal allocation. | | | |



An exploration is available on the Lyryx site. Log into your Lyryx course to run Allocating Income - No Partnership Agreement.

**Example 2:** Assume WBB Consulting had a net loss of $70,000 during the year and the partnership agreement stipulates that incomes/losses are to be allocated on a fractional basis of 2:1:4, respectively. The journal entry to close the income summary to the partners' capital accounts would be:

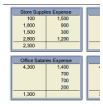
| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Wharton, Capital | | 20,000 | |
| | Bartwiz, Capital | | 10,000 | |
| | Butti, Capital | | 40,000 | |
| | Income Summary | | | 70,000 |
| | To close the income summary based on 2:1:4 fractional allocation; calculations: 2/(2+1+4) x 70,000 = 20,000; 1/(2+1+4) x 70,000 = 10,000; 4/(2+1+4) x 70,000 = 40,000. | | | |



An exploration is available on the Lyryx site. Log into your Lyryx course to run Allocating Income/Loss – Fractional Basis.

**Example 3:** Assume WBB Consulting had a net income of $100,000 during the year and the partnership agreement stipulates that incomes/losses are to be allocated on the ratio of capital investments. The journal entry to close the income summary to the partners' capital accounts would be:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Income Summary | | 100,000 | |
| | Wharton, Capital | | | 26,667 |
| | Bartwiz, Capital | | | 20,000 |
| | Butti, Capital | | | 53,333 |
| | To close the income summary with the allocation based on a ratio of capital investments; calculations: (20,000/75,000) x 100,000 = 26,667 (rounded to the nearest whole dollar); (15,000/75,000) x 100,000 = 20,000; (40,000/75,000 x 100,000 = 53,333 (rounded to the nearest whole dollar). | | | |



An exploration is available on the Lyryx site. Log into your Lyryx course to run Allocating Income – Ratio of Investments.

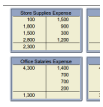
**Example 4:** Assume WBB Consulting had a net income of $60,000 during the year and the partnership agreement stipulates that incomes/losses are to be allocated based on salaries of $70,000 to Wharton; $20,000 to Bartwiz; zero to Butti; and the remainder equally. The journal entry to close the income summary to the partners' capital accounts would be:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Income Summary | | 60,000 | |
| | Butti, Capital | | 10,000 | |
| | Wharton, Capital | | | 60,000 |
| | Bartwiz, Capital | | | 10,000 |
| | To close the income summary with the allocation based on salaries and the remainder allocated equally; calculations: | | | |

| | Wharton | Bartwiz | Butti | Total |
|---|---|---|---|---|
| Net income | | | | 60,000 |
| Salaries: | 70,000 | 20,000 | 0 | -90,000 |
| Remainder to be allocated: | | | | -30,000 |
| -30,000x1/3 | -10,000 | -10,000 | -10,000 | 30,000 |
| Balance of net income to be allocated | | | | 0 |
| Total to be allocated to each partner | 60,000 | 10,000 | -10,000 | 60,000 |

The sum of the totals **must** reconcile (be equal to) the net income/loss being allocated.

Notice in Example 4 that Butti is receiving a negative allocation which results in a debit to her Capital account.



An exploration is available on the Lyryx site. Log into your Lyryx course to run Allocating Income – Remainder to be Allocated.

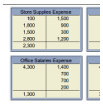
**Example 5:** Assume WBB Consulting had a net income of $90,000 during the year and the partnership agreement stipulates that incomes/losses are to be allocated based on a combination of: (a) 20% interest of each partner's beginning-of-year capital balance; (b) salaries of $70,000 to Wharton, $20,000 to Bartwiz, $15,000 to Butti; and (c) the remainder equally. The journal entry to close the income summary to the partners' capital accounts would be:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Income Summary | | 90,000 | |
| | Wharton, Capital | | | 64,000 |
| | Bartwiz, Capital | | | 13,000 |
| | Butti, Capital | | | 13,000 |
| | To close the income summary with the allocation based on a combination of interest and salaries with the remainder allocated equally; calculations: | | | |

| | Wharton | Bartwiz | Butti | Total |
|---|---|---|---|---|
| Net income | | | | 90,000 |
| Interest: | | | | |
| 20%x20,000; 20%x15,000; 20%x40,000 | 4,000 | 3,000 | 8,000 | -15,000 |
| Salaries: | 70,000 | 20,000 | 15,000 | -105,000 |
| Remainder to be allocated: | | | | -30,000 |
| -30,000x1/3 | -10,000 | -10,000 | -10,000 | 30,000 |
| Balance of net income to be allocated | | | | 0 |
| Total to be allocated to each partner | 64,000 | 13,000 | 13,000 | 90,000 |

The sum of the totals **must** reconcile (be equal to) the net income/loss being allocated.

The total income allocated to each partner is carried into the net income line of the Statement of Changes in Equity (as shown next).



An exploration is available on the Lyryx site. Log into your Lyryx course to run Allocating Incomes/Losses – Interest, Salaries, Remainder.

## Financial Statements

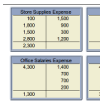
The income statement for a partnership is identical to that for a proprietorship. The statement of changes in equity for a partnership is similar to a proprietorship's except that there is a Capital account and Withdrawals account for each of the partners.

Assume that on January 1, 2023, the first year of operations for WBB Consulting, the partners, Wharton, Bartwiz, and Butti, invested $20,000, $15,000, and $40,000, respectively. During 2023 they each withdrew $5,000. The statement of changes in equity would appear as illustrated in Figure 13.5 given a net income for the year of $90,000 allocated as shown in Example 5 previously.

WBB Consulting
Statement of Changes in Equity
Year Ended December 31, 2023

| | Wharton | Bartwiz | Butti | Totals |
|---|---|---|---|---|
| Capital, January 1, 2023 | $ 0 | $ 0 | $ 0 | $ 0 |
| Add: Investments by partners | 20,000 | 15,000 | 40,000 | 75,000 |
| Net income | 64,000 | 13,000 | 13,000 | 90,000 |
| Subtotals | $84,000 | $28,000 | $53,000 | $165,000 |
| Less: Withdrawals by partners | 5,000 | 5,000 | 5,000 | 15,000 |
| Capital, December 31, 2023 | $79,000 | $23,000 | $48,000 | $150,000 |

**Figure 13.5: Statement of Changes in Equity for a Partnership**



An exploration is available on the Lyryx site. Log into your Lyryx course to run Allocating Income – Remainder to be Allocated.

In the equity section on the balance sheet there will be more than one owner's capital account as shown in Figure 13.6.

WBB Consulting
Balance Sheet
December 31, 2023

| | | |
|---|---|---|
| Assets | | |
| Cash | | $ 35,000 |
| Other assets | | 143,000 |
| Total assets | | $ 178,000 |
| | | |
| Liabilities | | $ 28,000 |
| | | |
| Equity | | |
| Wharton, capital | $79,000 | |
| Bartwiz, capital | 23,000 | |
| Butti, capital | 48,000 | 150,000 |
| Total liabilities and equity | | $ 178,000 |

**Figure 13.6: Balance Sheet for a Partnership**

## Summary of Chapter 13 Learning Objectives

### LO1 – Describe the characteristics of a proprietorship, including how its financial statements are different from those of a corporation.

A proprietorship is a business owned by one person. It is not a separate legal entity, which means that the business and the owner are considered to be the same entity. The profits of a proprietorship are taxed as part of the owner's personal income tax return. Unlimited liability is another characteristic of a proprietorship meaning that if the business could not pay its debts, the owner would be responsible even if the business's debts were greater than the owner's personal resources. Owner investments, owner withdrawals, and net incomes/losses are closed to one permanent account: the Owner's Capital account.

### LO2 – Describe the characteristics of a partnership, including how its financial statements are different from those of a corporation.

A partnership is a business owned by more than one person. Partners should have a partnership contract that details their agreement on things such as each partner's rights and duties, the sharing of incomes/losses and withdrawals, as well as dispute and termination procedures. A partnership is not a separate legal entity, which means that the business and the partners are considered to be the same entity. Each partner's share of the profits is taxed as part of that partner's personal income tax return. Unlimited liability is another characteristic of a partnership meaning that if the business could not pay its debts, the partners would be responsible even if the business's debts were greater than the partners' personal resources. The exception to this would be the formation of a limited liability partnership (LLP) that is permitted for professionals such as lawyers and accountants. In an LLP, the general partner(s) is/are responsible for the management of the partnership and assume(s) unlimited liability while the limited partners have limited liability but also limited roles in the partnership as specified in the partnership agreement. Partnerships also have a limited life and are subject to *mutual agency*. Mutual agency means that a partner can commit the partnership to any contract because each partner is an authorized agent of the partnership. The closing entries for a partnership are the same as those for a proprietorship except there is more than one capital account and more than one withdrawals account. The closing of the income summary to each partner's capital account is based on the allocation details in the partnership agreement.

## Discussion Questions

1. Define a partnership and briefly explain five characteristics.

2. What are the advantages and disadvantages of partnerships?
3. How does accounting for a proprietorship, partnership, and corporation differ?
4. How can partnership profits and losses be divided among partners?
5. Why are salary and interest bases used as a means to allocate profits and losses in a partnership?
6. How are partners' capital balances disclosed in the balance sheet?

## Exercises

---

**EXERCISE 13–1 (LO2)**

You are given the following data for the partnership of B. White and C. Green.

B. White and C. Green Partnership
Trial Balance
December 31, 2023

| | | |
|---|---|---|
| Cash | $41,000 | |
| Accounts Receivable | 68,400 | |
| Merchandise Inventory | 27,000 | |
| Accounts Payable | | $45,800 |
| B. White, Capital | | 30,000 |
| B. White, Withdrawals | 7,000 | |
| C. Green, Capital | | 20,000 |
| C. Green, Withdrawals | 5,000 | |
| Sales | | 322,000 |
| Cost of Goods Sold | 160,500 | |
| Rent Expense | 36,000 | |
| Advertising Expense | 27,200 | |
| Delivery Expense | 9,600 | |
| Office Expense | 12,800 | |
| Utilities Expense | 23,300 | |
| Totals | $417,800 | $417,800 |

Each partner contributed $10,000 cash during 2023. The partners share profits and losses equally.

**Required**:

**a.** Prepare an income statement for the year.

**b.** Prepare a statement of changes in equity for the year in the following format:

Statement of Changes in Equity
For the Year Ended December 31, 2023

| | *White* | *Green* | *Total* |
|---|---|---|---|
| Opening Balance | $ | $ | $ |
| *Add*: Investments during 2023 | | | |
| Net Income | | | |
| | $ | $ | $ |
| *Deduct*: Withdrawals | | | |
| Ending Balance | $ | $ | $ |

**c.** Prepare a balance sheet at December 31, 2023.

**d.** Prepare closing entries at year end.

---

**EXERCISE 13–2 (LO1,2)**

Refer to EXERCISE 13–1.

**Required**: Prepare the equivalent statement of changes in equity at December 31, 2023 assuming that the partnership is instead:

**a.** A proprietorship owned by B. White called White's (Combine C. Green balances and transactions with those of B. White.)

**b.** A corporation named BW and CG Ltd. with 100 common shares issued for $1 per share to each of B. White and C. Green. Assume opening retained earnings equal $29,800 and that 20,000 common shares were issued during 2023 for $20,000. Assume the net income of $52,600 is net of income tax.

---

**EXERCISE 13–3 (LO2)**

Refer to EXERCISE 13–1.

**Required**: Prepare the journal entry to allocate net income to each of the partners assuming the following unrelated scenarios:

**a.** Net income is allocated in a fixed ratio of 5:3 (White: Green).

**b.** Net income is allocated by first paying each partner 10% interest on opening capital balances, then allocating salaries of $30,000 for White and $10,000 for Green, then splitting the remaining unallocated net income in a fixed ratio of 3:2 (White:Green).

---

**EXERCISE 13–4 (LO2)** Watch video

Walsh and Abraham began a partnership by investing $320,000 and $400,000, respectively. They agreed to share net incomes/losses by allowing a 10% interest allocation their investments, an annual salary allocation of $75,000 to Walsh and $150,000 to Abraham, and the balance 1:3.

**Required**: Prepare the journal entry to allocate net income to each of the partners assuming the following unrelated scenarios:

**a.** Net income for the first year was $210,000.

**b.** A net loss for the first year was realized in the amount of $95,000.

---

**EXERCISE 13–5 (LO1)**

You are given the following data for the proprietorship of R. Black.

R. Black Proprietorship
Trial Balance
December 31, 2023

| | *Debit* | *Credit* |
|---|---|---|
| Cash | $ 10,000 | |
| Accounts receivable | 20,000 | |
| Merchandise inventory | 30,000 | |
| Accounts payable | | $ 25,000 |
| R. Black, capital | | 5,000 |
| R. Black, withdrawals | 7,000 | |
| Sales | | 166,000 |
| Cost of goods sold | 100,000 | |
| Rent expense | 24,000 | |
| Income taxes expense | 5,000 | |
| Totals | $196,000 | $196,000 |

Black contributed $5,000 capital during the year.

**Required**:

**a.** Prepare an income statement for the year.

**b.** Prepare a statement of proprietor's capital for the year in the following format:

R. Black Proprietorship
Statement of Proprietor's Capital
For the Year Ended December 31, 2023

| | |
|---|---|
| Balance at Jan. 1, 2023 | $ |
| Contributions | |
| Net income | |
| Withdrawals | |
| Balance at Dec 31, 2023 | $ |

**c.** Prepare a balance sheet at December 31, 2023.

**d.** Prepare closing entries at year-end.

---

**EXERCISE 13–6 (LO1)**

Refer to EXERCISE 13–5. Assume that the proprietorship is instead a corporation named R. Black Ltd., with 1,000 common shares issued on January 1, 2023 for a stated value of $5 per share. Assume there are no opening retained earnings and consider withdrawals to be dividends. Assume income taxes expense applies to corporate earnings.

**Required**:

**a.** Prepare an income statement for the year ended December 31, 2023.

**b.** Prepare a statement of changes in equity.

**c.** Prepare a balance sheet at December 31, 2023.

**d.** Prepare closing entries at year-end.

**EXERCISE 13–7 (LO2)**

Assume the following information just prior to the admission of new partner *I*:

| *Assets* | | *Liabilities* | |
|---|---|---|---|
| Cash | $ 5,000 | Accounts payable | $ 8,000 |
| Accounts receivable | 43,000 | | |
| | | *Partners' Capital* | |
| | | G, Capital $30,000 | |
| | | H, Capital 10,000 | 40,000 |
| | $48,000 | | $48,000 |

**Required**: Prepare journal entries to record the following unrelated scenarios:

**a.** New partner *I* purchases partners G's partnership interest for $40,000.

**b.** New partner *I* receives a cash bonus of $2,000 and a one-tenth ownership share, allocated equally from the partnership interests of G and H.

**c.** New partner *I* contributes land with a fair value of $100,000. Relative ownership interests after this transaction are:

| *Partner* | *Ownership interest* |
|---|---|
| G | 20% |
| H | 5% |
| I | 75% |
| | 100% |

**EXERCISE 13–8 (LO2)**

Assume the following information just prior to the withdrawal of Partner X:

| *Assets* | | *Liabilities* | |
|---|---|---|---|
| Cash | $20,000 | Accounts payable | $ 5,000 |
| Inventory | 50,000 | | |
| | | *Partners' Capital* | |
| | | X, Capital | $10,000 |
| | | Y, Capital | 20,000 |
| | | Z, Capital | 35,000 65,000 |
| | $70,000 | | $70,000 |

**Required**: Prepare journal entries to record the following unrelated scenarios:

**a.** Partner X sells his interest to new partner T for $25,000.

**b.** Partner X sells his interest to partner Y for $30,000.

**c.** Partner X sells his interest and is paid a share of partnership net assets as follows:

| | |
|---|---|
| Cash | $ 5,000 |
| Inventory | 5,000 |
| Accounts payable | (2,000) |
| | $ 8,000 |

Partner Y receives a 60% share of the partnership interest of X. Partner Z receives 40%.

---

**EXERCISE 13–9 (LO2)**

Smith, Jones, and Black are partners, sharing profits equally. They decide to admit Gray for an equal partnership (25%). The balances of the partners' capital accounts are:

| | |
|---|---|
| Smith, capital | $ 50,000 |
| Jones, capital | 40,000 |
| Black, capital | 10,000 |
| | $100,000 |

**Required**: Prepare journal entries to record admission of Gray, using the bonus method:

**a.** assuming the bonus is paid to the new partner; Gray invests $5,000 cash;

**b.** assuming the bonus is paid to existing partners; Gray invests $60,000 cash; the remaining partners benefit equally from the bonus.

## Problems

---

**PROBLEM 13–1 (LO2)**

On January 1, 2023, Bog, Cog, and Fog had capital balances of $60,000, $100,000, and $20,000 respectively in their partnership. In 2023 the partnership reported net income of $40,000. None of the partners withdrew any assets in 2023. The partnership agreed to share profits and losses as follows:

a. A *monthly* salary allowance of $2,000, $2,500, and $4,000 to Bog, Cog and Fog respectively.

b. An annual interest allowance of 10 per cent to each partner based on her capital balance at the beginning of the year.

c. Any remaining balance to be shared in a 5:3:2 ratio (Bog:Cog:Fog).

**Required**:

1. Prepare a schedule to allocate the 2023 net income to partners.

2. Assume all the income statement accounts for 2023 have been closed to the income summary account. Prepare the entry to record the division of the 2023 net income.

# Solutions To Discussion Questions

## Chapter 1 Solutions

1. Generally accepted accounting principles (GAAP) are a set of principles and assumptions that guide the preparation of financial statements, and that have gained wide-spread acceptance among users and practitioners.

2. The revenue recognition principle assumes that revenue is earned by the entity at the time when a service is provided or when a sale is made, not necessarily when cash is received.

3. The matching concept states that revenue is recognized in the time period when goods and services are provided and that the assets of the entity that have been used up during the time period (expenses) must be matched with the asset inflows (revenues) during the same period.

4. Accounting information should be comparable, verifiable, timely and understandable. Accounting information should only be disclosed if it is material – that is, of sufficient size or importance to influence the judgement of a reasonably knowledgeable user. Accounting information should also be disclosed in such a manner that the benefits of doing so outweigh the costs.

5. An asset is anything of value that is owned by the entity. Assets are economic resources controlled by an entity. They have some future value to the entity, usually for generating revenue.

6. A liability is an obligation to pay an asset or to provide services or goods in the future. Until the obligations are paid, creditors have claims against the assets of the entity.

   Equity represents the amount of assets owing to the owners of the entity. The total assets of an entity belong either to the shareholders or to the creditors.

7. The exchange of assets or obligations by a business entity, expressed in monetary terms like dollars, is called a financial transaction. The exchange of cash for land or a building is an example of such a transaction.

8. The three forms of business organization are corporations, sole proprietorships, and partnerships.

9. A business entity is a unit of accountability that exists independently from other units. A set of accounting records is kept for each unit or entity. The entity exists separately from

its owners. This concept is important because it keeps separate all the various activities in which the owner is involved; lumping all the activities together would not yield useful information for keeping track of the financial performance each financial unit.

10. Financial statements evaluate the performance of an entity and measure its progress. Financial information is collected, then summarized and reported in the financial statements (balance sheet, income statement, statement of cash flows, and statement of changes in equity).

11. The date line on the income statement, statement of changes in equity, and statement of cash flows represents a period of time. The income statement details the revenues and expenses that occurred over a given period of time. The statement of changes in equity shows how equity changed over a given period of time. The statement of cash flows shows how the balance in cash changed over a given period of time. The date line on the balance sheet is a point in time because each account listed on the balance sheet identifies the account balance on a specific date.

12. The purpose of the income statement is to communicate the inflow of assets, in the form of revenues, and the outflow or consumption of assets, in the form of expenses, over a period of time. Total inflows greater than total outflows creates net income or profit, which is reported on the Income statement and in retained earnings in the equity section of the balance sheet. The purpose of the balance sheet is to communicate what the entity owns (its assets), what the entity owes (its liabilities), and the difference between assets and liabilities (its equity) at a point in time.

    If revenue is recorded on the income statement, there is usually a corresponding increase in assets on the balance sheet. Similarly, if expenses are recorded on the income statement, there is generally a decrease in assets or increase of liabilities on the balance sheet.

13. Revenue is an increase in an entity's assets or a decrease in liabilities in return for services performed or goods sold, expressed in monetary units like dollars. An expense is an asset belonging to the entity that is used up or obligations incurred in selling goods or performing services.

14. Net income is the difference between revenues and expenses. It communicates whether the activities of the entity are being conducted profitably. Thus it is one measure of the success of the entity. Net income is one of the criteria used to determine the amount of dividends to be declared.

15. The statement of changes in equity shows why share capital and retained earnings have changed over a specified period of time – for instance, when shares are issued or net income is earned. The statement of cash flows explains to the users of the financial statements the entity's sources (inflows) and the uses (outflows) of cash over a specified period of time.

16. Financial statements are prepared at regular intervals to keep a number of interested groups informed about the financial performance of an entity. The timing is determined in response to the needs of management in running the entity or of outside parties, such as bankers to aid in granting loans to the entity, shareholders, or others interested in evaluating the

progress of the entity. They are generally used as a means to inform investing and lending decisions.

17. The accounting equation has the following form:

| ASSETS | = | LIABILITIES | + | EQUITY |
|---|---|---|---|---|
| (economic resources owned by an entity) | | (creditors' claims to assets) | | (owners' claims to assets – residual claims) |

The entity has assets, which are the resources it owns. The total assets owned by an entity must always equal the total claims of creditors and owners, who have the residual claims.

A company's accounting equation is expanded to include major categories of the balance sheet, like cash and share capital. An expanded form of the accounting equation could be as follows:

| ASSETS | = | LIABILITIES | + | EQUITY |
|---|---|---|---|---|
| Cash+Accounts Receivable +Equipment+Truck | | Accounts Payable | | Share Capital +Retained Earnings |

18. The double entry accounting system reflects the fact that each financial transaction affects at least two items in the accounting equation, in order to maintain the equality of the equation. For example,

    **a.** A truck is sold for cash: The asset truck decreases and the asset cash increases.

    **b.** An obligation is paid: The liability accounts payable decreases and the asset cash decreases.

    **c.** An account is collected: The asset cash increases and the asset accounts receivable decreases.

    In this way, the equation always remains in balance after each transaction is recorded.

19. A year-end is the last day of the fiscal year of the entity. The income statement, statement of cash flows, and statement of changes in equity reflect financial translations for the year up to this date. The balance sheet reflects the financial position of the entity at the year-end date. Interim financial statements may be prepared more frequently, say quarterly or monthly; these are prepared for each entity only if required by certain users, usually shareholders of large corporations with many shareholders. Year-end financial statements must be prepared for all entities.

20. A fiscal year refers to a 12-month accounting period and that may not coincide with the calendar year. A company whose fiscal year-end coincides with the calendar year has a December 31 year-end.

## Chapter 2 Solutions

1. The use of a transactions worksheet is impractical in actual practice because the record

keeping and the calculation of totals becomes convoluted. This method is therefore not very efficient or convenient, especially for a business with a high volume of transactions.

2. An *account* is an accounting record designed to classify and accumulate the dollar effect of financial transactions. In a simplified account called a T-account, the term "debit" is used to describe the left side of the account, while the term "credit" refers to the right side.

3. The association of "good" and "bad" or "increase" and "decrease" with credits and debits is not a valid association. To an accountant, "debit" means only "place an amount of the left side of an account" and "credit" means only "place an amount on the right side of an account."

4. A debit, which is always on the left side, records an increase in assets and expenses. A credit, which is always on the right side, records a decrease in assets and expenses. For example,

   **a.** If an asset like a truck is purchased for cash, the asset account "Truck" is debited and the Cash account is credited.

   **b.** If rent expense is incurred and paid with cash, the account "Rent Expense" is debited. The Cash account is credited.

5. A debit, which is always on the left side, records a decrease in liabilities, equity, and revenue. A credit, which is always on the right side, records an increase in liabilities, equity, and revenue. For example,

   **a.** A cash sale is made. Cash is debited, Sales is credited.

   **b.** We incur an expense, so we debit the expense account and credit a liability account like Accounts Payable.

   **c.** We issue some share capital for cash. The general ledger account Share Capital is credited and Cash is debited.

6.

| | *Assets, Expenses* | *Liabilities, Equity, Revenues* |
|---|---|---|
| | Increases are debited. | Increases are credited. |
| | Decreases are credited. | Decreases are debited. |

7. A trial balance is a list of each account contained in the general ledger of an entity, together with its individual debit or credit balance. It is prepared in order to establish the equality of debits with credits before the preparation of the financial statements

8. A trial balance is used to prepare the financial statements. It shows the totals of each revenue and expense account that will appear on the income statement and the asset, liability, and equity balances that will appear on the balance sheet.

9. A general journal is a chronological record of an entity's financial transactions. It is often called a book of original entry because each transaction is recorded in the general journal first before it is posted to the entity's accounts.

10. The positioning of a debit-credit entry in the journal is similar in some respects to programming methods. In the following entry,

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Dec. 1 | Accounts Receivable . . . . . | | XX | |
| | Sales . . . . . | | | XXX |
| | To record a sale on account. | | | |

The positions represent the instructions "Post $XX to the debit side of the Accounts Receivable account" (thus increasing the accounts receivable) and "Post $XXX to the credit side of the Sales account" (thus increasing sales).

11. A general ledger is a book that contains the separate asset, liability, equity, revenue, and expense accounts of an entity. It is often referred to as a *book of final entry* and it is prepared so that the balance of each account can be found easily at any time.

12. A chart of accounts is a list of account names and numbers used in the general ledger, normally listed in the order of presentation on the financial statements. For example, accounts that appear on the balance sheet or on the income statement are grouped together. This facilitates the preparation of the financial statements.

13. The steps in the accounting cycle involve analyzing transactions, journalizing them in the general journal, posting from the general journal into the general ledger, preparing the trial balance, and generating financial statements are steps followed each accounting period. These steps form the core of the accounting cycle. Additional steps involved in the accounting cycle will be introduced in Chapter 3.

## Chapter 3 Solutions

1. The sequence of financial transactions that occurs continuously during an accounting time period is called the *operating cycle*. Operations begin with some cash on hand. The cash is used to purchase supplies and pay expenses while revenue is being generated. When revenue is earned, cash is collected, beginning the cycle over again. While some transactions are being completed, others are only beginning.

2. No, the operating cycle does not have to be complete before income can be measured. Revenue can be recorded as earned when the product is sold or the service performed regardless of whether cash is collected. To measure income, expenses must be matched to revenues or the relevant time period. This usually can be done whether or not the operating cycle is complete.

3. Accrual accounting matches expenses to revenues for a particular time period. The accrual method is the basis on which accounts are adjusted to reach this objective. Under

this method, expenses are matched to the revenues during the period that the revenues are generated. The revenue recognition assumption helps determine when revenues are earned, thus allowing expenses to be matched to these revenues. Revenues are not generally matched to expenses by convention. The rationale is that revenues are recognised before expenses; therefore expenses should be matched to revenues.

4. Under the going concern concept, it is assumed that operating cycles that are incomplete at the end of financial periods will be completed during the (assumed) unlimited life of the entity. Since accountants must prepare financial statements even though operating cycles are incomplete, accrual accounting techniques are employed to more accurately measure economic activity during a given time period.

5. **a.** The cost of goods that are transferred to customers (such as items sold); these expenses can be matched to revenue generated relatively easily.
   **b.** The cost of assets only partially consumed during the time period like trucks and equipment; these expenses are as easily matched with revenue.
   **c.** Some expenses incurred during the accounting period are not easily identified with revenue generated, such as salaries of administrative staff. These are matched to the period in which they are incurred, rather than to related revenue.

6. Adjusting entries are changes made at the end of an operating cycle to more accurately reflect economic activity during the period. For instance, depreciation is calculated on plant and equipment assets and charged to the income statement.

7. At the end of the accounting period, an accountant must determine the amount of future benefits (assets like Prepaid Insurance) that belong on the balance sheet and how much should be recorded in the income statement (as Insurance Expense, in this example). The appropriate amounts must be transferred by means of adjusting entries.

8. Plant and equipment accounts and are handled differently than other asset accounts. The expired portion of the cost of such an asset is estimated based on its useful life and recorded as depreciation expense. This requires no cash outlay, despite being an expense. Plant and equipment asset accounts themselves are not reduced by the depreciation expense; rather, a contra asset account is set up in order to show a reduced balance on the balance sheet.

9. A contra account is used to reduce the value of a related balance sheet item. For instance, the account Accumulated Depreciation-Equipment is credited by the amount of depreciation expense recorded each year. The balance in this account is netted against the related account (Equipment, in this example) so that the asset is shown at carrying amount on the balance sheet.

10. At the end of the accounting period, the amount of the liability that belongs on the balance sheet must be determined. The account balance is adjusted through the use of an adjusting entry to the related revenue account (Repair Revenue, in this example).

11. Accruals are assets and liabilities that increase during an accounting period but are not recognised in the normal course of recording financial transactions. They are recorded

through the use of accrual adjusting entries at the end of the accounting period. Examples of accounts that accrue are:

| | Examples of Income Statement Account | Related Balance Sheet Account |
|---|---|---|
| Revenues: | Interest Earned | Interest Receivable |
| | Rent Earned | Unearned Rent |
| Revenue | | |
| Expenses: | Interest Expense | Interest Payable |
| | Rent Expense | Prepaid Rent |
| | Insurance Expense | Prepaid Insurance |
| | Salaries Expense | Salaries Payable |

Related balance sheet accounts are eventually reduced when cash is received or paid, as applicable.

12. An adjusted trial balance is prepared after posting the adjusting entries in order to establish the equality of debits and credits, and before preparing the financial statements.

13. The adjusted trial balance conveniently summarises the general ledger accounts in order of their appearance in the financial statements. This facilitates preparation of the financial statements.

14. The eight steps in the accounting cycle are:

    **a.** Transactions are analysed and recorded in the general journal.

    **b.** The journal entries are posted to general ledger accounts.

    **c.** An unadjusted trial balance is prepared to ensure debits equal credits.

    **d.** The account balances are analysed, and adjusting entries are prepared and posted.

    **e.** An adjusted trial balance is prepared to prove the equality of debits and credits.

    **f.** The adjusted trial balance is used to prepare financial statements.

    **g.** Closing entries are journalized and posted.

    **h.** A post-closing trial balance is prepared to ensure closing entries have been appropriately recorded and to ensure equality of debits and credits.

15. The first two steps in the accounting cycle occur continuously throughout the accounting period:

    **a.** Transactions are analysed and recorded in the general journal.

    **b.** The journal entries are posted to general ledger accounts.

16. The next six steps in the accounting cycle occur only at the end of the accounting period:

    **a.** An unadjusted trial balance is prepared to ensure debits equal credits.

**b.** The account balances are analysed, and adjusting entries are prepared and posted.

**c.** An adjusted trial balance is prepared to prove the equality of debits and credits.

**d.** The adjusted trial balance is used to prepare financial statements.

**e.** Closing entries are journalized and posted.

**f.** A post-closing trial balance is prepared to ensure closing entries have been appropriately recorded and to ensure equality of debits and credits.

These steps differ from the others because they don't deal with individual transactions but address account balances. The adjusted balances are used to prepare financial statements.

17. Revenues must be accrued during the current accounting period if they have been earned and even if they have not yet been satisfied with cash during in the current accounting period. An account receivable is an example. Expenses must be accrued during the current accounting period if they relate to the revenue recognised during the current period or the current time period itself (for example, salaries) even if they have not yet been paid in cash. An account payable is an example. Cash outlays are recorded as prepaid expenses if cash is paid in advance of expense recognition. Prepaid Insurance is an example. For each such asset and liability, the accountant must determine at the end of the accounting period the appropriate balance that should be recorded on the balance sheet. These accounts are adjusted as appropriate through adjusting entries.

18. The need for regular financial information requires that revenue and expense accounts of a business be accumulated for usually no more than one year by convention, and that financial statements be prepared for that period. Using a consistent time period allows revenue and expenses for one period to be compared to a preceding period. A one-year cycle reduces effects of seasonal variations in business activity, for instance, but also allows for business performance to be evaluated by owners and creditors regularly and predictably.

19. Temporary accounts include all revenues and expense categories that are reduced to zero at the end of the fiscal year when they are closed to the Retained Earnings account. Permanent accounts have a continuing balance from one fiscal year to the next: these include all balance sheet accounts.

20. An income summary account is an account used only at year-end to accumulate all revenue and expense balances, and to reduce their general ledger accounts to zero at the end of the fiscal year. This account summarises the Net Income (or Net Loss) for the period. It is closed to the Retained Earnings account at year-end.

21. A post-closing trial balance is a listing of balance sheet accounts and their balances after all temporary accounts have been closed. It proves the equality of general ledger debit and credit balances before the next accounting period commences.

# Chapter 4 Solutions

1. The economic resources of Big Dog Carworks Corp. are its assets: cash, accounts receivable, inventories, prepaid expenses and property, plant and equipment.

2. The financial statements are the balance sheet, the income statement, the statement of changes in equity, and the statement of cash flows. Notes to the financial statements are also included. The statements report the financial position of the company at year-end, the results of operations for the year, changes in share capital and retained earnings, sources and uses of cash during the year, and information in the notes that is not quantifiable or that provides additional supporting information to the financial statements.

3. Fundamentally, accounting measures the financial progress of an entity. The purpose of financial statements is to communicate information about this progress to external users, chiefly investors and creditors.

4. ASSETS $=$ LIABILITIES $+$ EQUITY

   \$284,645 $=$ 241,145 $+$ 43,500.

5. Net assets equal \$43,500 (\$284,645 $-$ 241,145). Net assets are synonymous with equity. They represent the amount of total assets attributable to the shareholders after taking into account the claims of creditors.

6. The individual assets of Big Dog Carworks Corp. as shown on the balance sheet are cash, accounts receivable, inventories, prepaid expenses, and property, plant, and equipment. Its liabilities are borrowings, accounts payable, and income taxes payable.

7. Per Note 3(d), property, plant, and equipment are depreciated on a straight-line basis over their estimated useful lives. Land is not depreciated.

8. **a.** Current asset accounts: Per Note 3(a) and (b), revenue and expenses are accrued. This will give rise to current assets and current liabilities like accounts receivable, inventory, prepaid expenses, accounts payable, income taxes payable, and accrued liabilities. In addition, accounts receivable are carried at net realizable value. Inventory is carried at lower of cost and net realizable value. These amounts must be adjusted to the correct balance. Prepaid expenses would be adjusted to reflect the unused portion at the end of the period.

   **b.** Non-current asset accounts: Per Note 3(d), buildings are depreciated at 4% per year using the straight-line method. Equipment is depreciated at 10% per year on a straight-line basis; motor vehicles are depreciated on a straight-line basis over five years.

   **c.** Current liability accounts: income taxes payable are adjusted at the end of the period to reflect the estimated amount of taxes incurred for the period. All expenses that are incurred but not yet paid are added to the unrecorded accrual accounts. Examples are salaries payable for partial periods and interest owed but not yet paid.

**d.** Non-current liability accounts: borrowings must be analysed to determine current and non-current amounts, as shown in Note 5.

9. The balance sheet is classified in order to facilitate the analysis of its information. For instance, comparing amounts that will be needed to be satisfied within the upcoming year (current liabilities) with resources available to satisfy these claims (current assets) allows readers to assess the relative ability of the corporation to meets its short-term obligations as they become due.

10. Big Dog Carworks Corp. makes it easier to compare financial information from period to period by presenting comparative annual financial data for two years.

11. The auditor is H. K. Walker, Chartered Professional Accountant. The audit report states that the financial statements of BDCC have been examined in accordance with generally accepted auditing standards. It also states that, in the auditor's opinion, the statements present fairly the financial position of BDCC and the results of its operations and changes in financial position for the year just ended. There are no concerns raised in the report.

12. The auditor's report indicates that GAAP have been consistently applied in BDCC's financial statements (see last sentence of the report).

13. Management's responsibilities for financial statements are to ensure that they are prepared in accordance with GAAP, in this case International Financial Reporting Standards.

    Though the financial statements are produced under the direction of management, they belong to the shareholders. Shareholders are the owners of the company.

## Chapter 5 Solutions

1. A business providing a service holds no inventory for resale. Thus, a business that sells goods must match the cost of the goods sold with the revenue the sales generate. The Income Statement will show this, as well as the Gross Profit (also known as Gross Margin)—the difference between Sales and Cost of Goods Sold. A service business Income Statement would not show these items.

2. Gross Profit is the result of deducting Cost of Goods Sold from Sales (or Net Sales). For example, if a car is sold for $16,000 but cost $12,000, the Gross Profit calculation would be

| | |
|---|---|
| Sales | $16,000 |
| Cost of Goods Sold | 12,000 |
| Gross Profit | 4,000 |

   The profit on the sale, before considering operating and other expenses, is $4,000. The Gross Profit percentage is $4,000/16,000 or 25 per cent. That means for every $1 of Sales, the business earns $0.25 on average to cover operating and other expenses.

3. The Merchandise Inventory account collects information regarding the purchase of inventory, return to supplier of inventory, purchase discounts, transportation costs, and inventory shrinkage adjustments.

4. The sales and collection cycle starts off when a sale is made, often creating an Account Receivable. The Account Receivable is subsequently removed when cash is collected. If merchandise is returned because it is say, the wrong model or defective, a Sales Returns and Allowances records this amount and the Account Receivable is reduced. To speed up collections, discounts may be offered in return for prompt payments. If so, a Sales Discount may be given.

   Assuming a perpetual inventory system, the purchase and payment cycle starts with the purchase of merchandise, which becomes the inventory held for resale; the purchase generally creates an Account Payable. The Account Payable is removed once the account is paid by a cash disbursement. Purchases may be returned if the inventory item is wrong or defective. If so, the Account Payable would be reduced and a credit to Merchandise Inventory would be recorded. Discounts may be offered by the supplier to speed up payment by the purchaser. If so, the purchaser would be given a purchase discount which is debited to Account Payable and credited to Merchandise Inventory.

5. The contra accounts used for sales are

   **a.** Sales Returns and Allowances, which accumulates merchandise returned to the seller by the customer because of some defect or error.

   **b.** Sales Discounts, which accumulates discounts taken by customers when payments are made to the seller within the discount period.

   In a perpetual inventory system, there are no contra accounts used for purchases.

6. (Appendix) In a perpetual inventory system, the balances in Merchandise Inventory and Cost of Goods Sold are updated with each transaction involving purchases and sales. In a periodic inventory system, the balances in Merchandise Inventory and Cost of Goods Sold are not known until an inventory count is performed. The advantage of a perpetual system is that account balances are maintained in real time and therefore always known which is not the case for a periodic system where account balances have to be estimated until an inventory count is performed.

## Chapter 6 Solutions

1. **a.** The amount of inventory on hand is important to management for two reasons. First, management wants to ensure there is ample inventory to meet all customers' orders. Second, because the cost of carrying inventory (for instance, rental of warehouse space, insurance) can be quite high, management wants to keep the inventory as low as possible.

**b.** Investors and creditors are concerned with the inventory because inventory is a large asset. They will want to assess its current amount and trends compared to other years and competitors' levels to help determine the financial strength of the company before investing or lending money, or for use as collateral, for instance.

2. Accountants must ensure the inventory is not obsolete or unsalable and that it is properly counted and valued, using an acceptable inventory cost flow assumption that is applied consistently from year to year.

3. The laid-down cost of inventory is the invoice price of the goods less purchase discounts, plus transportation-in, insurance while in transit, and any other expenditure made by the purchaser to get the merchandise to the place of business and ready for sale.

4. Flow of goods is the physical movement of the goods themselves as they enter the firm and are sold, especially when dealing with similar items, while the flow of costs is the costs assigned to the flow of goods in the firm using specific identification, FIFO, or average cost bases.

   GAAP does not require that the flow of costs basis be similar to the physical flow of goods, except when individual units of inventory can be identified by, for example, serial numbers. However, it does require that once the cost basis is selected, that it be followed consistently from period to period.

5. Two factors are considered in costing inventory: the quantity and the assigned value per unit. Assigning the value is often the more difficult aspect, as this involves tracking the laid-down costs of many items. Physical quantities can be tracked by computerised accounting systems and verified or determined by physical count at year-end.

6. Consistency in inventory costing is necessary for comparing a company's performance from year to year. GAAP does allow a company to change its inventory valuation method; however, the company must restate inventory and cost of goods sold effects on prior years using the new method. In practise this change is rarely made.

7. If the ending inventory is overstated at the end of 2022, then cost of goods sold is understated; therefore, the 2022 net income is overstated by $5,000. In 2023, the opening inventory would be overstated and cost of goods sold would be overstated; therefore, the net income would be understated by $5,000.

8. Inventory should be valued at less than cost when the lower of cost and net realisable value (LCNRV) principle is applied, perhaps due to factors such as physical deterioration, obsolescence, or changes in price levels.

9. The primary reason for the use of the LCNRV method of inventory valuation is to prevent overstatement. If the likely value of inventory has declined below cost, it is prudent to recognize the loss immediately, rather than when the goods are eventually sold. Net realisable value is the expected selling cost of inventory, less any applicable costs related to the sale.

10. When inventory is valued at LCNRV, cost refers to the laid-down cost.

11. The inventory cost flow assumptions permissible under GAAP are specific identification, FIFO or average cost.

12. Estimating inventory is useful for two reasons:

    **a.** It is useful for inventory control. When a total inventory amount is calculated under a periodic inventory system through physical count and valuation, an estimate can help check the accuracy.

    **b.** It is useful for the preparation of interim financial statements. Under a periodic inventory system, inventory on hand at any point in time is not readily available. To take a physical count often would be costly and inconvenient. An estimate offers a way of determining a company's inventory at any point in time in a cost-effective manner.

13. Under the gross profit method, the percentage of profit remaining after accounting for cost of goods sold (the gross profit percentage) is assumed to remain the same from year to year. By applying the rate to sales, gross profit and then cost of goods sold can be estimated. Opening inventory and purchases will be known from the accounting records, so cost of goods available for sale can be determined. The difference between the cost of goods sold and cost of goods available for sale is the ending inventory amount.

    Under the retail inventory method, mark-up on goods purchases then sold is considered to be constant. Both cost and selling prices of goods acquired are then valued at retail by using the mark-up amount. From this, the ending inventory at retail is calculated. By applying the cost percentage (costs of goods available for sale divided by retail costs of goods available for sale) to the retail ending inventory, its value at cost can be calculated.

    i. Example – gross profit method:

| | | |
|---|---|---|
| Sales | | $100 |
| *Cost of Goods Sold:* | | |
| Opening Inventory (from records) | 80 | |
| Purchases (from records) | 70 | |
| Cost of Goods Available for Sale | 150 | |
| Ending Inventory | (a)? | (b)? |
| Gross Profit | | $(c)? |

    If the gross profit percentage average is 25%, the following can be estimated:

| | | |
|---|---|---|
| (c) Gross profit | = 25% of $100 | = $25 |
| (b) Cost of goods sold | = $100 − $25 (c) | = $75 |
| (a) Ending inventory | = $150 − $75 (b) | = $75 |

    Ending inventory (a) would be $75.

    ii. Example – retail inventory method; assumed mark-up = 200%:

| | *At Retail* | | *At Cost* | |
|---|---|---|---|---|
| Sales | | $500 | | $500 |
| Cost of Goods Sold: | | | | |
| Opening Inventory (records) | $(b) | | $80 | |
| Purchases (records) | (b) | | 300 | |
| Cost of Goods Available for Sale | (c) | | 380 | |
| Ending Inventory | (d)? | | (e)? | |
| Cost of Goods Sold | | (a)? | | (f)? |
| Gross Profit (same as Sales) | | $-0- | | (g)? |

(a) Cost of Goods restated at retail to equal sales $= \$500$

(b) Opening Inventory and Purchases re-stated at retail $= \$300 \times 200\% = \$600;$
$= 80 \times 200\% = 160$

(c) Cost of Goods Available at retail $= \$600$ (b) $+ 160$ (b)
$= \$760$

(d) Ending Inventory at retail $= \$760$ (c) $- 500$ (a)
$=$ Cost of Goods Available at retail $= \$260$
$-$ Cost of Goods Sold at retail

(e) Inventory at cost $=$ Inventory at retail/200% $= \$260$ (c)/200%
$= \$130$

(f) Cost of Goods Sold at cost $= \$380 - 130$(e) $= \$250$

(e) Gross Profit at cost $= \$500 - \$250$(e) $= \$250$

14. The gross profit method is particularly useful in cases where goods have been stolen or lost in a fire; in such cases it is not possible to determine the balance in the ending inventory by a physical count when the periodic inventory system is used.

15. The retail inventory method assumes an average inventory cost flow assumption because the cost percentage used to calculate ending inventory and cost of goods sold is based on a constant mark-up.

## Chapter 7 Solutions

1. Internal control is the system, plan, or organization established to ensure, as far as practical, the orderly and efficient conduct of business. In part, it is used to ensure accurate record-keeping and the timely preparation of financial statements, safeguard the assets of the business, and promote efficiency.

2. A bank reconciliation is a comparison of the items shown on the bank statement with the entries made in the records of the entity. A reconciliation leads to the update of the accounting records and the correction of errors, if any. Thus, control over cash is enhanced.

3. Different reconciling items that may appear in a bank reconciliation are as follows:

| *Book Reconciling Items* | *Bank Reconciling Items* |
|---|---|
| Book errors | Outstanding deposits |
| NSF cheques | Outstanding cheques |
| Bank charges | Bank errors |

4. The steps in preparing a bank reconciliation are (for which there is no specific order):

   **a.** Cancelled cheques returned by the bank are compared with cheques recorded as cash disbursements (both outstanding cheques from previous months and cheques written in current month's cash disbursements). Any outstanding cheques must be deducted from the bank statement ending balance.

   **b.** Other disbursements made by the bank are examined. These could include NSF (not sufficient funds) cheques or bank service charges. These must be deducted from the companies Cash account balance in the general ledger.

   **c.** The deposits shown on the bank statement are compared with the amounts recorded in the company records.

   **d.** The prior month's bank reconciliation is reviewed for outstanding deposits at the current date.

   **e.** Errors in the bank statement and in the company's record must be entered on the reconciliation.

5. A cheque received from trade customers that has been deposited but cannot be cleared by the bank because the customer's own bank balance is less than the amount of the cheque is an NSF (Not Sufficient Funds) cheque.

6. A petty cash system reimburses petty cash for an amount equal to the amounts disbursed when the fund has been depleted.

7. When a petty cash fund is established, a regular cheque is written for the amount to be held in the petty cash fund. The general ledger account Petty Cash is debited and Cash is credited. The cheque is cashed and the funds are held by the petty cash fund custodian.

   When the balance of cash in the funds held by the custodian is low, a cheque is written to reimburse the fund for the amount of all receipts held. The cheque is recorded as a debit to the applicable expense accounts and a credit to the Cash account in the general ledger.

8. Allowance for doubtful accounts is a contra accounts receivable account showing the estimated amount that will not be collected. To set it up, bad debt expense is debited and the allowance is credited for the estimated amount. In this way, the bad debt expenses for the period are matched with revenues for that period.

9. The income statement method for calculating the estimated amount of doubtful accounts assumes that a certain percentage of sales made on account will become uncollectible. The percentage is applied to credit sales and is chosen on the basis of bad debt experience of previous years. The estimated bad debt expense is calculated independently of any current balance in the Allowance for Doubtful Accounts general ledger account.

10. Ageing of accounts receivable is the detailed analysis of trade accounts receivable based on time that has elapsed since the creation of the receivable. An estimated loss percentage is applied to each time category to estimate an uncollectible amount. The estimated bad debt expense consists of the difference between the current balance in the Allowance for Doubtful Accounts general ledger account and the amount required to be set up based on this analysis.

11. The usual balance in the Accounts Receivable general ledger account is a debit. Occasionally, as a result of double payments, merchandise returns, or allowances granted for example, a credit balance occurs in some accounts. Theoretically, the credit balance should be transferred to liabilities. In practice, the net amount of accounts receivable is reported on the balance sheet unless the credits would materially distort the numbers reported.

## Chapter 8 Solutions

1. To capitalize a cost means to record an expenditure as an asset instead of an expense.

2. An expenditure is a cash disbursement. A capital expenditure is one that

   **a.** Benefits more than the current accounting period, and these benefits are reasonably assured;

   **b.** Is material in amount.

   A revenue expenditure is an expense and does not have the characteristics belonging to a capital expenditure. NOTE: An expense is known as a revenue expenditure because its purpose is to generate revenue in the period in which it was expended (i.e., the current accounting period).

3. The purchase of a computer for business use qualifies as a capital expenditure when it benefits more than one accounting period. However, its purchase price may not be immaterial, depending on the company's capitalization policy. The annual maintenance or repairs made to the computer to keep it running are revenue expenditures if the cash disbursements are frequent, small, and do not extend the life of the computer. Purchase of a part that significantly enhances performance or extends the useful life of the computer might be capitalized, again depending on materiality.

4. Purchasing land and buildings for a lump sum means that no distinction is made between the two items at the time the purchase price is negotiated. The purchase price must be apportioned between the Land and Building accounts because buildings are subject to depreciation. The purchase price, therefore, is allocated on the basis of relative fair values of the land and the buildings.

5. As a matter of expediency, large companies set a dollar limit to help determine whether a disbursement is to be treated as a revenue or a capital expenditure because efforts required

to capitalize and amortize an inexpensive item are so much greater than the benefits to be derived. The concept of materiality is used to determine the amount at which an expenditure is considered capital in nature.

6. The three criteria are life of the part (whether it will benefit more than the current accounting period), the effect of the expenditure (whether it will enhance the service potential of the asset), and whether it is a material amount.

7. When one asset is exchanged for another, the cost of the asset acquired is determined by the fair value of the asset given up. If the fair value of the asset given up is not known, then the fair value of the asset acquired becomes the cost of the new asset.

8. Depreciation is the process of allocating the cost of a tangible, long-lived asset to each accounting period that will benefit from its use. The amount to be allocated is based on an estimate of the asset's useful life, residual value, and method of depreciation to be used.

9. As time elapses, the economic benefits provided by an asset may decrease, so that the efficiency of the asset is greater during its initial years and less later on. If a car is free from initial defect, it should not require any repairs in its first year of use, but it will need regular maintenance (e.g., oil changes). Eventually, it will likely require repairs, such as a replacement battery or new valves. The annual maintenance costs will increase, costing the user more to use the car. Therefore, the value of the car or the value of its services each year will decrease, so depreciation should be lower in subsequent years.

10. A usage method of depreciation is useful when the use of an asset varies from period to period and when wear and tear is the major cause of depreciation. A time-based method, such as straight-line depreciation, assumes that each period receives services of equal value from the use of the asset; time-based methods ignore asset usage. The preferable method is a matter of judgement.

    The sports car may wear out in two ways. The distance travelled has a large bearing on the value of the car; however, the passage of time also does, as an older model generally sells for less than its original cost. In terms of the useful life of the car, it will only last for a certain number of kilometres and it only renders services if it is driven. A usage method is likely best to measure depreciation, since the car is not necessarily driven for equal times during each period; the less it is driven, the more periods it will last.

11. Under the declining balance method, the calculation of depreciation is made without an adjustment for residual value. The asset cannot be depreciated below a reasonable residual value. The arithmetic of this formula is such that it will never reduce the asset balance to zero. Under the straight-line method, there is an adjustment made for residual value. This difference is not inconsistent, since both methods eventually result in a balance considered to be the residual value.

12. Under the declining balance method, a constant depreciation rate is applied in each accounting period to the remaining carrying amount (cost less accumulated depreciation). Both the depreciation expense and the carrying amount decline every period. Therefore, it is called the declining balance method.

Under the straight-line method, the depreciation expense for each accounting period is the same over the useful life of the asset.

13. If an asset is expected to have a 10-year life, then, each year 10 per cent of its life is over (100%/10 years = 10%). The double-declining balance is double this rate or 20% per year, calculated on the carrying amount of the asset at the end of the previous year.

14. Partial-year depreciation can be calculated using the half-year rule or by pro-rating depreciation expense over the number of months (rounded) that the asset was in use.

15. Either changes in estimated residual value or useful life may affect the calculation of depreciation expense. In both cases, no change is made to depreciation expense already recorded. The effects of the changes are spread over the remaining future periods.

16. Subsequent capital expenditures affect depreciation calculations in the same manner as changes in accounting estimates. The effects are accounted for prospectively (over the remaining future periods).

17. At the end of each reporting period, the recoverable amount (fair value less estimated costs of disposal) of an asset must be compared to its carrying value. If the recoverable amount is lower, the carrying value must be adjusted downward (a credit to the asset account) and an impairment loss must be recorded (a debit to an expense account). Subsequent years' depreciation expense calculations must also be adjusted.

18. Estimates of future events are commonplace in accounting, and necessary to provide more meaningful information to financial statement users, within reason. Depreciation is one example. The benefits of matching the use of a capital asset to the revenue of future periods which it helps to produce is deemed to be useful information under GAAP. To facilitate this, depreciation methods rely on estimates, and estimates of future events are subject to error. Accounting is intended to produce financial information that are not precise but rather that present a fair representation of the entity. If the estimates used subsequently prove to be incorrect, accountants change them.

19. Significant parts may have different estimated usage patterns, useful lives, and residual values. They may be replaced at different points in the useful life of the long-lived asset. Separate accounting for significant parts allows for these differences to be reflected in the financial statements.

20. A gain or loss on disposal does not occur when the carrying amount of an asset is the same as the proceeds of disposition.

21. A trade-in involves acquiring a long-lived asset by giving up a similar asset to the one being acquired (i.e., exchanging it) as part of the purchase price. It is not quite the same as an outright sale, which involves giving up a long-lived asset and receiving just cash for it.

22. The trade-in allowance may be higher or lower than the fair value of the used asset on the open market. Dealers often give more trade-in allowance on a used car than it is actually worth to make purchasers think that they are getting a better deal on the new car.

23. The cost of the new asset is calculated as the sum of cash paid plus the fair value of the trade-in.

24. Intangible assets, unlike property, plant, and equipment, cannot be touched or otherwise sensed. They are the same as PPE in that they represent future economic benefits to an entity over more than one accounting period, and so are similarly capitalized.

25. A patent is an exclusive right granted by the state to an inventor to produce and sell an invention for a specified period of time. A patent's useful life may be affected by economic factors based on demand and competition. The 20-year life may be excessive; a shorter life may be more realistic. For example, if a company develops a unique computer and patents it, even though it cannot be reproduced by other firms for 20 years, nothing stops a competitor from studying it, improving it, and patenting this improved computer. Although the "unique" computer may be useful for many years, it may be technologically obsolete before the patent expires.

26. A copyright is the exclusive right granted by the state to publish a literary or artistic work. It exists for the lifetime of the author and for a specific period of time after death. Similarly, a trademark is a legal right granted by the state, in this case for an entity to use a symbol or a word as a trademark to identify one of its products or services. A copyright would be granted for a piece of music or a novel. Examples of trademarks are the word "Coke"®on soft drink bottles and the stylised 'M'®of the McDonald's®logo.

27. Goodwill is a long-lived asset that represents the capitalized value of superior earnings potential of an acquired company. Goodwill is an asset but it is not an intangible asset. Such factors as favourable customer relations, loyal and competent employees, possession of valuable patents or copyrights, high-quality products, or effective management help create goodwill. Goodwill cannot be identified separately because it relates to the total entity acquired. Its useful life is considered indefinite unless its value is impaired because these attributes are assumed to continue into the future. Goodwill can only be purchased in an arms-length transaction because it is otherwise difficult to attach a value to it.

28. Intangible assets are generally measured and recorded at cost. The measurement basis should be disclosed, along with

    - the type of amortization method for each class of intangible asset;
    - opening and ending balances for cost, accumulated amortization, and carrying value, and disclosure of any changes;
    - whether they are internally generated; and
    - whether they have finite or indefinite lives.

## Chapter 9 Solutions

1. A current liability is a form of debt that is expected to be paid within the longer of one year

of the balance sheet date or one operating cycle. A long-term liability is also a form of debt but it is expected to be paid beyond one year of the balance sheet date or the next operating cycle, whichever is longer. Current and long-term liabilities must be shown separately on the balance sheet.

2. Examples of known current liabilities are accounts payable, sales taxes payable, short-term notes payable, and payroll liabilities.

3. Known current liabilities are those where the payee, amount, and timing of payment are known. These are different from estimated current liabilities where the amount is not known and must be estimated.

4. Examples of estimated current liabilities include warranties and income taxes.

5. Estimated current liabilities are those where the amount is not known and must be estimated. The amount of an estimated current liability is probable and can be reliably estimated. A contingent liability is either not probably or it cannot be reliably estimated. Contingent liabilities are not recorded whereas estimated current liabilities are recorded.

6. A bond is a debt security that necessitates periodic interest payments during its life as well as a future repayment of the borrowed amount. A bond indenture is the contract that binds the corporation to the bondholders; it specifies the terms with which the corporation must comply and may restrict further borrowing by the corporation. A trustee may be used to serve as an impartial intermediary between the corporation and the bondholders, and so better balance the rights and needs of these two groups.

7. A bondholder has the following rights:

   **a.** The right to receive the face value of the bond at a specified maturity date in the future, that is, the right to receive the amount of money that was invested;

   **b.** The right to receive periodic interest payments at a specified per cent of the bond's face value; this interest represents the bondholder's return on investment; and

   **c.** The right to have the corporation pledge some secured assets to protect the bondholder's investment; this safeguard restricts excess borrowing and, in the event that interest or the face amount of the bonds cannot be paid, allows for the sale of these assets to generate the funds necessary for repayment.

8. Bond issues with different characteristics are disclosed separately in the financial statements, or more usually, in a note. The interest rate, maturity date, and any restrictions imposed on the corporation in the bond indenture, together with any assets pledged, also must be disclosed.

9. The different possibilities in the redemption of bonds before their maturity follow:

   **a.** The bonds can be repurchased on the open market if this option is financially advantageous to the issuer.

**b.** The issuer may exercise a call provision if it is financially advantageous. A call provision, sometimes included in a bond indenture, permits early redemption at a specified price, usually higher than the face value.

**c.** The bondholder or issuer may exercise a conversion feature if provided for in the bond indenture, whereby the bonds can be converted into corporate shares.

10. If the bond contract interest rate is the same as the prevailing market interest rate, the bond will sell "at par". If the bond contract interest rate is higher than the prevailing market interest rate, the bond will sell at a premium. Prospective bondholders will bid up the price of the bonds because the bonds pay a rate of interest higher than other securities with similar features and risks. This creates a premium over the face value of the bonds. If the bond contract interest rate is lower than the prevailing market interest rate, the bond will sell at a discount because prospective bondholders will not be willing to pay the face value of the bonds. The issuer will have to accept a lower price so the effective interest rate will equal that of other securities with similar features and risks.

11. Under GAAP, an unamortised premium (discount) is added to (deducted from) the face value of the bond so that the liability is recorded at its carrying amount on the balance sheet.

12. If the bond contract interest rate is greater than that required in the market, then the bonds are sold at a premium. If the investment market operates efficiently, investor should earn only the market rate of interest. By paying a premium over the face value, the overall return to the investor is reduced from the bond contract rate to the market rate in effect at the issue date.

13. The *effective interest method* of amortisation calculates different amounts of amortisation from one period to another.

14. A loan, like a bond issue, is a means for an entity to raise investment capital through creditors. Both can be secured, and generally have fixed rates of interest and specified terms of repayment. However, loans are repaid with blended payments of interest and principal over the life of the liability. While the total payment on a loan is constant, the relative portion of interest decreases with each payment because loan principal is being reduced with each preceding payment. The portion of principal repayment increases. Bonds pay interest only to investors at regular intervals over the life of the issue plus a payment for the face value of the bond when it matures.

15. If money is borrowed today for one year, at the end of that year the money to be repaid is increased by the amount of interest charged. The future value is therefore the principal plus interest. If a certain sum must be repaid in one year, the value in today's money would exclude the interest to be earned in the future. This is its present value. The time value of money is represented by interest. Interest is added to the principal to obtain the future value, and it is removed from a future sum to arrive at the present value.

16. The price of a bond is determined by combining the present value of the following future cash flows associated with the bond:

**a.** a single amount, the face value, to be paid at maturity; and

**b.** semi-annual interest payments made during the bond's life.

## Chapter 10 Solutions

1. The corporate form of organization offers the following advantages:

   **a.** It is a legal entity with unlimited life; its existence is separate from its owners; and it has many of the rights and responsibilities of an individual.

   **b.** It has limited liability; the owners are liable only for the amount they invest in the corporation.

   **c.** Acquiring capital is facilitated by being able to issue shares (ownership units) with different risk and reward structures to many owners.

   **d.** Corporations may pay income taxes at rates that may be lower than rates for individuals.

2. The owners of the corporation are liable for only the amount they have each invested. If the corporation fails, its assets are used to pay the creditors. If assets are not sufficient to pay all creditors, the shareholders have no further liability. Creditors are protected to some degree by disclosure of the corporation's limited liability.

3. Some of the rights of common shareholders are as follows:

   **a.** The right to participate in the management of the corporation by voting at shareholders' meetings (1 share generally equals 1 vote).

   **b.** The right to participate in dividends when they are declared by the corporation's board of directors.

   **c.** The right to participate in a distribution of assets on liquidation.

   **d.** The right to appoint auditors.

   The rights may be printed on the share certificate itself; they are detailed in the articles of incorporation.

4. The shareholders elect a board of directors, which appoints the officers of the corporation. The officers execute the policies approved by the board of directors. The directors are not involved in the daily management of the corporation.

5. **a.** The two main classes of shares are:

   i. Preferred Shares – a class of shares that has a preference over common shares. Holders of preferred shares are entitled to payment of dividends before common shareholders and usually have prior claims on a corporation's assets on liquidation. A fixed dividend rate may be attached to the shares. Some preferred shares may have voting privileges.

ii. Common Shares – the class of shares that are the basic ownership units in a corporation. Ownership of common shares carries the right to vote, to share in dividends, and to share in the assets of the corporation if it is liquidated; however, all other claims to the assets of a corporation rank ahead of the common shareholders' claims.

**b.** Terms relating to the present status of a corporation's shares:

i. Authorized Shares – the designated number of shares within each class of shares that a corporation may issue.

ii. Unissued Shares – the shares of share capital in each class that a corporation is authorized to issue but has not yet issued.

iii. Issued Shares – the total number of authorized shares that have been issued in the name of shareholders; issued shares may not actually be in the hands of shareholders (e.g., treasury shares).

iv. Outstanding Shares – authorized shares that have been issued and are actually in the hands of shareholders.

v. Reacquired Shares – shares that have been re-purchased from shareholders, have not been cancelled, and have not been reissued (also called treasury shares).

6. Shares are preferred in that their owners

**a.** Generally assume less risk than common shareholders. When a corporation is dissolved, preferred shareholders have first claim on the remaining assets after the creditors have been paid; and

**b.** Have a prior claim to the earnings of the corporation. Preferred shareholders must be paid specified dividends before any payments are made to common shareholders.

Preferred shareholders are similar to common shareholders in that both

**a.** Own share certificates, evidence of corporate ownership;

**b.** Have the legal guarantee that all shares of the same class will be treated equally with respect to rights and privileges attached to them;

**c.** Have the right to dividends declared by the board of directors; and

**d.** Have the right to participate in distribution of assets on liquidation of the corporation.

Preferred shareholders differ from common shareholders in that

**a.** Common shareholders can participate in the management of the corporation by voting at shareholders' meetings (though some preferred shares may have voting privileges);

**b.** Common shareholders can appoint auditors;

**c.** Common shareholders assume more risk than preferred shareholders. However, common shareholders have more potential for receiving substantial dividends and increases in the value of their shares if the corporation is successful; and

**d.** Common shareholders receive the balance of assets after other claims have been satisfied—in the case of a bankruptcy or liquidation, there are usually few or no other assets to distribute to common shareholders; preferred shareholders have prior claims.

7. When the shares of a corporation are selling at a high price on the stock market, management may opt for a share split in order to put them more easily within the reach of more investors.

8. The major components of the equity section of the balance sheet are share capital (preferred shares and common shares) and retained earnings. These two major components are distinguished because share capital represents invested capital not available for distribution to owners, while retained earnings are available for distribution as dividends.

9. Retained earnings represent net assets that are earned by a corporation over its life that have not been distributed as dividends to shareholders. As such, they can be used to invest in productive activities of the business.

10. Some of the main considerations involving the declaration of dividends are

    **a.** Whether or not there is enough cash, or whether the dividends can be paid by distribution of some other assets;

    **b.** Whether the policy of the corporation precludes dividend payments; and

    **c.** Whether there is a legal requirement that dividends must be declared.

11. A corporation may decide not to pay cash dividends even though it has a substantial net income because financial conditions may make it impractical or impossible.

    **a.** There may be insufficient cash, due to a significant investment in capital assets or reduction of debt, for instance. In a growth-oriented corporation, shareholders benefit from this strategy through increased earnings, which increase market prices for the shares.

    **b.** The policy of the corporation may preclude dividend payments.

    **c.** There is no legal requirement that dividends must be paid, unless otherwise specified by the various classes of shares.

    **d.** Dividends may be issued in shares of the corporation rather than in cash. A share dividend helps to preserve cash or to increase the number of shares traded on the stock market.

12. *The date of dividend declaration*: the corporation is legally required to pay the dividend; a liability is established.

    *The date of record*: shareholders who own the shares on this date will receive the dividend.

    *The date of payment*: the dividend is actually paid on this date.

13. A cash dividend reduces both the asset Cash and the equity account Retained Earnings. A share dividend does not affect Cash; the Retained Earnings account is still reduced, but the account Common Shares (or Preferred, if applicable) is increased. A share dividend has no net effect on equity.

14. Dividend preferences that may be attached to preferred shares are

    **a.** Preferred shareholders are entitled to dividends before any dividends are distributed to common shareholders;

    **b.** Preferred shares may be cumulative; undeclared dividends can accumulate from one year to the next; and

    **c.** Preferred shareholders may participate with common shareholders in dividend distributions beyond their usual preferred dividends.

    Preferred shares have returns that are more predictable and thus attract investors with a lower tolerance for risk. These advantages do not mean that purchasing preferred shares are necessarily better than purchasing common shares. Holding common shares has its own advantages. Common shareholders generally have legal control of the corporation. Ownership of commons shares carries the right to vote, to earn potentially unlimited dividends, and to have share values increase on stock markets.

15. If preferred shares are cumulative, undeclared dividends from previous years are accumulated and must be paid along with the current dividend. The unpaid dividends are called dividends in arrears. They are not a liability of the corporation unless dividends have been declared by the board of directors.

16. A share dividend is a dividend in the form of shares of the corporation. Retained earnings decrease and share capital increases. A share split is an action taken by the corporation to increase the number of shares outstanding and reduce the per-share market value. No journal entry is required to record a share split, and there is no effect on the accounting records.

17. A share dividend increases the number of shares held by each shareholder but the ownership percentage remains the same. If a 10 per cent share dividend is distributed, each shareholder holds more shares but the percentage of ownership remains the same, illustrated as follows:

| | *Ownership* | | | |
|---|---|---|---|---|
| | *Before Share Dividend* | | *After Share Dividend* | |
| *Shareholders* | *Shares* | *%* | *Shares* | *%* |
| W | 250 | 25% | 275 | 25% |
| X | 250 | 25% | 275 | 25% |
| Y | 250 | 25% | 275 | 25% |
| Z | 250 | 25% | 275 | 25% |
| | 1,000 | 100% | 1,100 | 100% |

## Chapter 11 Solutions

1. A statement of cash flows (SCF) provides external readers of a corporation's financial statements with a summary of the cash transactions that took place in the company in a particular period. For example, a reader could determine the amount of proceeds from the sale of plant and equipment assets, or whether plant and equipment assets were acquired. It communicates how the company is financing its activities (internally from operations or externally from other sources), and why cash increased or decreased.

   Its advantage over the balance sheet is that the balance sheet reports the financial position of the company at a particular point in time, while the SCF reports the changes in cash that occurred from one balance sheet date to another.

   An income statement reports earnings on an accrual basis, which is important. However, investors and creditors are also interested in determining how a corporation has generated and used cash during a fiscal period, because cash is an important determinant of liquidity. The SCF provides this information succinctly to readers.

2. These activities are important to readers who wish to evaluate the financial position and the results of operations of a particular company in order to make certain decisions, such as whether or not to invest in it. The extent of cash flows resulting from financing and investing decisions can help readers identify the underlying, longer-range activities of the firm that may affect future earnings, such as whether plant and equipment assets are being acquired, or debt is being retired. The SCF makes these activities explicit.

3. An increase in accounts receivable during a fiscal year is recorded by a debit. The offsetting credit to the Cash account denotes a use of cash. In effect, cash has been diminished because amounts owing by customers has increased, instead of being collected.

4. The declaration of cash dividends has no effect on cash flow, since it does not involve the use of cash; it merely sets up a dividend payable in the books of the company. The payment of a dividend declared decreases cash flow, since it involves the outlay of cash. Whether the dividend was declared in prior years or in the current year has no effect; only the payment reduces cash. Changes in the dividends payable account balance from one year to the next also affect cash flows. A net reduction in dividends payable (a debit) increases cash outflow (a credit). A net increase in dividends payable decreases cash outflow.

5. Buying or selling short-term investments may decrease or increase the amount of cash available to the company if they are considered part of cash and cash equivalents. If they are considered part of C&CE, transactions involving short-term investments have no effect on cash flow from operating activities.

6. Net income for a period usually consists of sales less cost of sales, operating expenses, and other expenses like interest and income taxes. If there are a large number of credit sales and the amount of accounts receivable over the last year has increased, then there is less cash inflow compared to sales revenue recorded on the income statement. If many expenses are

prepaid, then cash has been used but the expenses have not decreased net income. Similarly, if inventory levels have increased from one year-end to the next, cash has decreased but cost of goods sold is unaffected on the income statement.

Depreciation of property, plant, and equipment decreases net income but not cash. Losses and gains on sale of property, plant, and equipment assets affect net income, but do not affect cash flows. Cash may also be used to purchase property, plant, and equipment, pay off borrowings, and pay dividends, as examples. These investing and financing activities affect cash, but are not reflected on the income statement.

7. Main balance sheet account transactions that use cash are (a) operations of the company (net cash outflow from operating activities during the period), (b) purchase of property, plant and equipment assets, (c) retirement of debt and share capital, and (d) payment of dividends. The balance sheet accounts are analysed by looking at the opening and ending balances of the account, determining the reasons for the change in the account, and recording the effects as a cash inflow or outflow from operating, financing, or investing activities.

## Chapter 12 Solutions

1. Comparisons can be made using published industry statistics, statistics of previous years, statistics of leading competitors, or internally-developed ratios.

2. Liquidity is a corporation's ability to pay current liabilities as they become due. Being "illiquid" means creditors that have provided the corporation with goods and services on account, or with other forms of short-term borrowing, cannot be paid. Implications of being illiquid:

   Creditors:

   **a.** Can refuse to provide further goods or services on account.

   **b.** Can sue for payment.

   **c.** Can put the corporation into receivership or bankruptcy.

   **d.** Can refuse to lend additional cash.

   **e.** Can demand repayment of all debts, including long-term debt.

   Shareholders:

   **a.** May be unwilling to invest in additional share capital of the corporation

   **b.** Risk the loss of their investments if the company becomes bankrupt

3. Net income is based on accrual accounting and not cash basis accounting. For example, if $1,000,000 of sales are on account, this transaction increases net income but not cash. As an additional example, the corporation may have large sums of capital tied up in inventory which means there is less cash available to pay the liabilities.

4. *Current ratio*: Indicates how many current asset dollars exist to pay current liabilities.

   *Acid-test ratio*: Indicates whether or not the corporation is able to meet the immediate demands of creditors, without considering current assets tied up in inventory or prepaid expenses.

   *Accounts receivable collection period*: Indicates the average time needed to collect receivables.

   *Number of days of sales in inventory*: Indicates how many days of sales can be made with inventory on hand.

   *Revenue operating cycle*: Indicates how long it is between the purchase of inventory and the subsequent collection of cash from sales of inventory.

5. **a.** Working capital is the difference between current assets and current liabilities.

   The current ratio is computed by dividing current assets by current liabilities. It is one measure of whether or not the corporation is able to repay short-term creditors. The acid-test ratio, on the other hand, is a more severe test of liquidity. It is computed by dividing quick assets (cash, short-term investments, accounts receivable) by current liabilities.

   **b.** The current ratio is only a rough indication of how able an entity is to pay its current liabilities as they become due. The relative liquidity of components of current assets is not considered in the calculation of this ratio. The acid-test ratio is often used as a more severe test of liquidity.

6. The ability to pay short-term creditors as amounts become due depends on the liquidity of the current assets. If, for example, company X's current assets consist of cash and company Y's current assets consist of inventory, company Y will not be able to pay its creditors easily because of a lack of cash.

7. Taking too long to collect accounts receivable will reduce the amount of cash available to pay liabilities as they become due. The same is true if there is an over-investment in inventory.

8. An acceptable number of days to collect accounts receivable and to convert inventory to sales depends on several factors, including the industry in which the corporation does business and the state of the economy. Management judgement and experience are crucial. If accounts receivable are collected too slowly, or if credit is extended to liberally, debts may not be collected in a timely manner, or at all. If accounts receivable collections are too short, potential credit sales may be lost. Similarly, higher number of days of sales in inventory indicates that more cash is tied up in inventory. On the other hand, a lower number of days of sales in inventory may indicate that inventory levels are too low. Potential sales may be lost.

9. Advantages of decreasing number of days of sales in inventory might be that

   **a.** The amount of assets tied up in inventory is reduced.

   **b.** The dangers of obsolescence or deterioration are reduced.

**c.** Less storage space is used for inventory, so that warehousing expenses are reduced.

A disadvantage of decreasing number of days of sales in inventory is that stock can be reduced to the point where sales are lost.

10. The revenue operating cycle indicates the number of days that elapse between the purchase of inventory and the subsequent collection of cash after a sale is made. It is computed by adding the average number of days needed to turn over inventory and the average number of days needed to collect receivables. It is useful in evaluating liquidity because a comparison can be made of the number of days needed to complete the cycle and the number of days within which the payables are due. Management can determine how long it will take the corporation to pay reinvest in inventory with cash generated by the revenue operating cycle.

11. **a.** Ratios that measure margins on sales:
    i. *Gross profit ratio*: indicates the amount of revenue left to cover other expenses after deducting cost of goods sold. It is calculated by dividing gross profit by net sales.
    ii. *Operating profit ratio*: indicates the amount of revenue left to cover interest and income taxes expenses after deducting cost of goods sold and operating expenses. It is calculated by dividing income from operations by net sales.
    iii. *Net profit ratio*: Indicates the percentage of sales revenue left in the business after payment of operating expenses, interest, and income taxes. It is calculated by dividing net income by net sales.

    **b.** Ratios that measure returns on balance sheet items:
    i. Sales to total assets ratio: Indicates the adequacy of sales in relation to average total assets. It is calculated by dividing net sales by average total assets. In the longer term, typically investments in property, plant and equipment assets make up the majority of assets that generate sales and so PPE is sometimes used as a good estimate when calculating this ratio.
    ii. Return on total assets ratio: Indicates how efficiently a company uses all of its balance sheet assets to earn income from operations. It is calculated by dividing income from operations by average total assets.
    iii. Return on equity ratio: Indicates the amount of income that is generated by shareholders' proportion of total assets. It is calculated by dividing net income by average equity.

12. Analysts and investors are concerned with the financial structure of a corporation because the higher the reliance on debt, the more substantial claim the creditors have against the assets of the corporation. The corporation is also more vulnerable to rises in interest rates and economic downturns, which in turn affects future earnings expectations.

13. Reliance on creditor financing can be positive, since financing a corporation by issuing additional shares results in a dilution of existing shareholders' control of the corporation. Also, creditor financing is beneficial to shareholders when the return is greater than the interest

paid on the debt. However, interest has to be paid on the debt and, ultimately, the debt itself has to be repaid. Interest reduces the income of the corporation. If interest rates paid on debt are higher than the returns generated from the borrowed funds, net income is reduced. The corporation is more susceptible to economic downturns and interest rate increases as its reliance on debt grows.

14. *Short-Term Financing* Advantages:

    **a.** Usually does not require interest payment to the creditors

    **b.** Easily obtained

    Disadvantages:

    **a.** Payment is required within a short time

    **b.** More risky, because it has to be renewed more frequently

    *Long-Term Financing* Advantages:

    **a.** More secure, because renewal is infrequent

    **b.** Principal repayment not required for a long time

    Disadvantages:

    **a.** Must pay interest, and legal documents are often signed to enforce this.

    **b.** More work to acquire (must present financial statements, may have to be audited)

15. **a.** *Earnings per share*: Indicates the amount of net income that has been earned on each common share. It is calculated by dividing (net income less preferred share dividends) by number of common shares outstanding.

    **b.** *Price-earnings ratio*: Indicates the reasonableness of the market price in relation to per-share earnings. It is calculated by dividing market price per share by earnings per share.

    **c.** *Dividend yield*: Indicates the short-term cash return that could be expected from an investment in a company's shares. It is calculated by dividing dividends declared by outstanding common shares.

16. Horizontal analysis is the comparison of the change in one item on financial statements (such as merchandise inventory) during two or more accounting periods. Vertical analysis is the analysis of the composition of a financial statement by restating all items in that statement as percentages of a total. Generally sales is used as the income statement base and total assets (or total liabilities and equity) is used as the balance sheet base. Comparing the percentages of a particular item between two or more years shows the change in composition of the statement components.

# Chapter 13 Solutions

1. A partnership is an unincorporated form of business organisation in which the entity is owned by two or more persons. Five characteristics of a partnership are:

   **a.** *Limited life* – if a partner is admitted, withdraws, or dies, the existing partnership is dissolved and the business continues under a new partnership agreement.

   **b.** *Unlimited liability* – in general, each partner is personally liable for the debts that the partnership cannot pay. In the event that a partner cannot pay his/her share of partnership debts, the other partners can be called on to pay personally for such debts.

   **c.** *Mutual agency* – each partner can make binding agreements not only on the partnership, but also on the other partners.

   **d.** *Co-ownership of assets* – all assets contributed to the partnership by individual partners are jointly owned by all partners.

   **e.** *Sharing of profits and losses* – if the partnership agreement does not stipulate how profits and losses will be shared, all profits and losses are shared equally.

2. The advantages of a partnership are:

   **a.** The knowledge, skills, and financial resources of two or more persons can be combined.

   **b.** Partnerships can be formed relatively easily and quickly.

   **c.** A partnership can act promptly as a business enterprise in all matters. A corporation may be restricted in its actions on certain matters by its charter, by laws, or by statute.

   **d.** Many of the formal government reports required of a corporation are not required of the partnership.

   **e.** Income taxes are not levied against partnerships. The partners, however, report on their individual tax returns their share of partnership income.

   The disadvantages of partnerships are:

   **a.** Liability is usually unlimited. Partners are liable for all debts of the partnership.

   **b.** The life of the partnership is limited. Death, withdrawal, or admission of a partner; agreement to terminate; bankruptcy; and incapacity of a partner are all terminate a partnership.

   **c.** The partnership is a mutual agency; that is, each partner may act in business matters as the agent of the partnership.

   **d.** The ability of a partnership to raise funds may be limited.

3. Although a proprietorship, partnership, and corporation engage in the same equity transactions of investment, distribution of income, and incomes/losses, how they are recorded is different.

In a proprietorship, there is only one equity account: owner's capital. Investments by the owner, distributions of income known as withdrawals, and incomes/losses are all recorded in the owner's capital account.

In a partnership, there is a capital account for each partner. A partner's investments, distributions of income in the form of withdrawals, and a share of incomes/losses are all recorded in the partner's capital account.

In a corporation, there are two types of equity accounts: share capital and retained earnings. Investments by the owners, known as shareholders, are recorded in share capital. Distributions of income, known as dividends, along with incomes/losses are recorded in retained earnings.

4. Profits and losses are divided equally among partners if no agreement exists. Otherwise, several methods may be followed to allocate profits or losses Formulas often consider three factors – a return to each partner based on relative levels of services rendered, a return on capital invested, and a further division of remaining profits and losses according to a fixed ratio.

5. Salary and interest allocations are included in the division of profits and losses because the time and effort contributed by individual partners to the business and the amount of contributed capital may differ among partners.

6. The balance sheet of a partnership merely shows the ending capital balance of each partner. If many partners exist, a total capital amount is shown and the details of each partner's capital account appear in a statement of changes in equity.

# Solutions To Exercises

## Chapter 1 Solutions

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**EXERCISE 1–1**

**a.** Partnership

**b.** International Financial Reporting Standards

**c.** Ethics

**d.** Financial accounting

**e.** Managerial accounting

**f.** Separate legal entity

**g.** Limited liability

**h.** Unlimited liability

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**EXERCISE 1–2**

**a.** Violation Cost principle

**b.** Violation: Business entity principle

**c.** Violation: Business entity principle

**d.** Violation: Revenue recognition principle

**e.** Correct: Materiality principle

**f.** Correct: Monetary unit principle

**g.** Correct: Matching principle

**h.** Violation: Consistency principle

**i.** Violation: Full disclosure principle and possibly going concern principle if the company is no longer viable

---

**EXERCISE 1–3**

**a.** 30,000

**b.** 9,000

**c.** 95,000

**d.** In **a**, debt financing = (20,000/50,000) × 100=40%. In **b**, debt financing = (9,000/10,000) × 100=90%. In **c**, debt financing = (15,000/95,000) × 100 = 15.79% (rounded to two decimal places). Therefore, the greatest percentage of debt financing is reflected in **b**.

**e.** In **a**, equity financing = 100 − 40 = 60%. In **b**, equity financing = 100 − 90 = 10%. In **c**, equity financing = 100 − 15.79 = 84.21%. Therefore, the greatest percentage of equity financing is reflected in **c**.

---

**EXERCISE 1–4**

| ASSETS | | | = | LIABILITIES | + | EQUITY | | |
|---|---|---|---|---|---|---|---|---|
| Cash | + | Equipment | = | Accounts Payable | + | Share Capital | + | Retained Earnings |

*A.* Retained earnings = $5,000 (3,000 + 8,000 − 4,000 − 2,000)
*B.* Accounts payable = $3,000 (1,000 + 6,000 − 3,000 − 1,000)
*C.* Cash = $1,000 (4,000 − 1,500 − 3,000 − 500)
*D.* Retained earnings = $6,000 (6,000 + 7,000 − 3,000 − 4,000)
*E.* Equipment = $3,500 (2,500 −4,500 − 500 − 1,000)

---

**EXERCISE 1–5**

**a.** ASSETS = LIABILITIES + EQUITY

Equity at Jan. 1 = $10,000 ($50,000 − 40,000)

Equity at Dec. 31 = $20,000 ($40,000 − 20,000)

The increase in equity during the year was $10,000 ($20,000 ending equity − 10,000 beginning equity). Given that during the year no share capital was issued and no dividends were declared, $10,000 is the amount of net income earned during 2023.

**b.** ASSETS = LIABILITIES + EQUITY

Equity at Jan. 1 = $10,000 ($50,000 − 40,000)

Equity at Dec. 31 = $20,000 ($40,000 − 20,000)

The increase in equity during the year was $10,000 ($20,000 ending equity − 10,000 beginning equity). Given that during the year no share capital was issued and $5,000 of dividends were declared, $15,000 is the amount of net income earned during 2023 [calculated as net income − $5,000 dividends = $10,000 increase in equity; net income = 10,000 + 5,000 or 15,000].

**c.** ASSETS = LIABILITIES + EQUITY

Equity at Jan. 1 = $10,000 ($50,000 − 40,000)

Equity at Dec. 31 = $20,000 ($40,000 − 20,000)

The increase in equity during the year was $10,000 ($20,000 ending equity − 10,000 beginning equity). Given that during the year $12,000 of share capital was issued and no dividends were declared, a net loss of $2,000 was realized for 2023 (calculated as net income + $12,000 share capital issued = $10,000 increase in equity; net income = $10,000 − $12,000; net income is therefore a negative $2,000 which represents a net loss).

**d.** ASSETS = LIABILITIES + EQUITY

Equity at Jan. 1 = $10,000 ($50,000 − 40,000)

Equity at Dec. 31 = $20,000 ($40,000 − 20,000)

The increase in equity during the year was $10,000 ($20,000 ending equity − 10,000 beginning equity). Given that during the year $8,000 of share capital was issued and $12,000 of dividends were declared, $14,000 is the amount of net income earned during 2023 (calculated as net income + $8,000 share capital issued − $12,000 dividends = $10,000 increase in equity; net income = $10,000 − $8,000 + $12,000; net income = $14,000).

---

**EXERCISE 1–6**

| | | | | | |
|---|---|---|---|---|---|
| **a.** | L | **h.** | A | **o.** | L |
| **b.** | A | **i.** | A | **p.** | E |
| **c.** | L | **j.** | E | **q.** | A |
| **d.** | A | **k.** | E | **r.** | E |
| **e.** | A | **l.** | A | **s.** | E |
| **f.** | E | **m.** | E | **t.** | A |
| **g.** | L | **n.** | E | | |

## EXERCISE 1–7

1. ASSETS = Cash + Accounts Receivable + Unused Supplies + Land + Building + Equipment
   = $33,000 + $82,000 + $2,000 + $25,000 + $70,000 + $30,000
   = $242,000 Total Assets
2. LIABILITIES = Bank Loan + Accounts Payable
   = $15,000 + $27,000
   = $42,000 Total Liabilities
3. ASSETS = LIABILITIES + EQUITY
   EQUITY = $242,000 Total Assets − $42,000 Total Liabilities
   = $200,000 Total Equity

Since equity is $200,000 and retained earnings is $40,000, share capital must be $160,000.

## EXERCISE 1–8

EDW Inc.
Income Statement
Month Ended March 31, 2023

| | | |
|---|---|---|
| Revenues | | |
| Service Revenue | | $20,000 |
| Expenses | | |
| Wages Expense | $9,000 | |
| Miscellaneous Expense | 2,500 | |
| Insurance Expense | 1,500 | |
| Office Supplies Expense | 1,000 | 14,000 |
| Net Income | | $6,000 |

EDW Inc.
Statement of Changes in Equity
Month Ended March 31, 2023

| | Share Capital | Retained Earnings | Total Equity |
|---|---|---|---|
| Opening Balance | $ -0- | $ -0- | $ -0- |
| Shares Issued | 2,000 | | 2,000 |
| Net Income | | 6,000 | 6,000 |
| Ending Balance | $2,000 | $6,000 | $8,000 |

EDW Inc.
Balance Sheet
March 31, 2023

| Assets | | Liabilities | | |
|---|---|---|---|---|
| Cash | $1,000 | Accounts Payable | | $5,000 |
| Accounts Receivable | 4,000 | | | |
| Equipment | 8,000 | Equity | | |
| | | Share Capital | $2,000 | |
| | | Retained Earnings | 6,000 | |
| | | Total Equity | | 8,000 |
| Total Assets | $13,000 | Total Liabilities and Equity | | $13,000 |

***NOTE:***

*The $2,000 amount for shares issued was calculated using A = L + E or, using the accounts in the order given in the alphabetized information; 4,000 + 1,000 + 8,000 = 5,000 − 1,500 − 2,500 − 1,000 + 20,000 + Share Capital − 9,000; 13,000 = 11,000 + Share Capital; 13,000 − 11,000 = 2,000 Share Capital.*

*Alternatively, you could have inserted all the values from the alphabetized information into the financial statements and then solved for the unknown Share Capital amount. There is often more than one approach to solving math related questions.*

---

**EXERCISE 1–9**

Algonquin Inc.
Income Statement
Year Ended July 31, 2023

| | | |
|---|---|---|
| Revenues | | |
| Service Revenue | | $81,000 |
| Expenses | | |
| Advertising Expense | $5,000 | |
| Insurance Expense | 7,000 | |
| Salaries Expense | 64,000 | 76,000 |
| Net Income | | $5,000 |

Algonquin Inc.
Statement of Changes in Equity
Year Ended July 31, 2023

| | *Share Capital* | *Retained Earnings* | *Total Equity* |
|---|---|---|---|
| Opening Balance | $10,000 | $6,000 | $16,000 |
| Net Income | | 5,000 | 5,000 |
| Dividends | | (2,000) | (2,000) |
| Ending Balance | $10,000 | $9,000 | $19,000 |

Algonquin Inc.
Balance Sheet
July 31, 2023

| Assets | | Liabilities | | |
|---|---|---|---|---|
| Cash | $9,000 | Accounts Payable | $3,000 | |
| Accounts Receivable | 17,000 | Note Payable | 18,000 | |
| Machinery | 14,000 | Total Liabilities | | $21,000 |
| | | Equity | | |
| | | Share Capital | $10,000 | |
| | | Retained Earnings | 9,000 | |
| | | Total Equity | | 19,000 |
| Total Assets | $40,000 | Total Liabilities and Equity | | $40,000 |

---

**EXERCISE 1–10**

Algonquin Inc.
Income Statement
Year Ended July 31, 2023

| | | |
|---|---|---|
| *Revenues* | | |
| Service Revenue | | $81,000 |
| *Expenses* | | |
| Advertising Expense | $5,000 | |
| Insurance Expense | 7,000 | |
| Salaries Expense | 64,000 | 76,000 |
| Net Income | | $5,000 |

Algonquin Inc.
Statement of Changes in Equity
Year Ended July 31, 2023

| | *Share Capital* | *Retained Earnings* | *Total Equity* |
|---|---|---|---|
| Opening Balance | $7,000 | $6,000 | $13,000 |
| Shares Issued | 3,000 | | 3,000 |
| Net Income | | 5,000 | 5,000 |
| Dividends | | (2,000) | (2,000) |
| Ending Balance | $10,000 | $9,000 | $19,000 |

Algonquin Inc.
Balance Sheet
July 31, 2023

| | | | | |
|---|---|---|---|---|
| *Assets* | | *Liabilities* | | |
| Cash | $9,000 | Accounts Payable | $3,000 | |
| Accounts Receivable | 17,000 | Note Payable | 18,000 | |
| Machinery | 14,000 | Total Liabilities | | $21,000 |
| | | *Equity* | | |
| | | Share Capital | $10,000 | |
| | | Retained Earnings | 9,000 | |
| | | Total Equity | | 19,000 |
| Total Assets | $40,000 | Total Liabilities and Equity | | $40,000 |

***NOTE:***

*Given that additional shares were issued for cash of $3,000 during the year ended July 31, 2023 and share capital had a balance of $10,000 at July 31, 2023, the end of the year, the beginning balance in share capital must have been $7,000.*

---

**EXERCISE 1–11**

Wallaby Inc.
Income Statement
Month Ended March 31, 2023

| | | |
|---|---|---|
| *Revenues* | | |
| Fees Earned | | $12,000 |
| *Expenses* | | |
| Equipment Rental Expense | $9,400 | |
| Wages Expense | 3,400 | |
| Fuel Expense | 500 | 13,300 |
| Net Loss | | $1,300 |

Wallaby Inc.
Statement of Changes in Equity
Month Ended March 31, 2023

| | *Share Capital* | *Retained Earnings* | *Total Equity* |
|---|---|---|---|
| Opening Balance | $6,400 | $4,000 | $10,400 |
| Net Loss | | (1,300) | (1,300) |
| Ending Balance | $6,400 | $2,700 | $9,100 |

Wallaby Inc.
Balance Sheet
March 31, 2023

| *Assets* | | *Liabilities* | | |
|---|---|---|---|---|
| Cash | $6,000 | Rent Payable | $2,500 | |
| Accounts Receivable | 1,600 | Note Payable | 18,000 | |
| Truck | 22,000 | Total Liabilities | | $20,500 |
| | | *Equity* | | |
| | | Share Capital | $6,400 | |
| | | Retained Earnings | 2,700 | |
| | | Total Equity | | 9,100 |
| Total Assets | $29,600 | Total Liabilities and Equity | | $29,600 |

---

**EXERCISE 1–12**

Adams Ltd.
Income Statement
For the Month Ended January 31, 2023

| | | |
|---|---|---|
| *Revenue* | | |
| Service Revenue | | $3,335 |
| *Expenses* | | |
| Rent expense | $300 | |
| Repairs expense | 500 | |
| Salaries expense | 1,000 | |
| Miscellaneous expense | 335 | |
| Total expenses | | 2,135 |
| Net Income | | $1,200 |

Adams Ltd.
Statement of Changes in Equity
For the Month Ended January 31, 2023

| | *Share Capital* | *Retained Earnings* | *Total Equity* |
|---|---|---|---|
| Opening balance | $ -0- | $ -0- | $ -0- |
| Shares issued | 3,000 | -0- | 3,000 |
| Net income | -0- | 1,200 | 1,200 |
| Ending balance | $3,000 | $1,200 | $4,200 |

Adams Ltd.
Balance Sheet
At January 31, 2023

| | | |
|---|---|---|
| *Assets* | | |
| Cash | $1,000 | |
| Land | 1,000 | |
| Building | 2,500 | |
| Total assets | | $4,500 |
| *Liabilities* | | |
| Accounts payable | | $300 |
| *Equity* | | |
| Share capital | $3,000 | |
| Retained earnings | 1,200 | |
| Total equity | | 4,200 |
| Total liabilities and equity | | $4,500 |

---

**EXERCISE 1–13**

Mitch's Architects Ltd.
Income Statement
For the Year Ended December 31, 2023

| | | |
|---|---|---|
| **Revenues** | | |
| Consulting fees earned | | $150,000 |
| **Expenses** | | |
| Office rent expense | $60,000 | |
| Salaries and benefits expense | 40,000 | |
| Utilities expense | 12,000 | |
| Insurance expense | 5,000 | |
| Supplies and postage expense | 2,400 | 119,400 |
| Net income | | $ 30,600 |

---

**EXERCISE 1–14**

Mitch's Architects Ltd.
Statement of Changes in Equity
For the Year Ended December 31, 2023

| | Share Capital | Retained Earnings | Total Equity |
|---|---|---|---|
| Opening balance* | $20,400 | $ 6,000 | $26,400 |
| Shares issued** | 10,000 | | 10,000 |
| Net income | | 30,600 | 30,600 |
| Dividends*** | | (1,000) | (1,000) |
| Ending balance | $30,400 | $ 35,600 | $66,000 |

* Share capital opening balance ($30,400 − 10,000)
* Retained earnings opening balance ($5,000 balance + 1,000 dividends)
** Share capital issued during the current year given in the question as $10,000
*** Dividends paid during the current year given in the question as $1,000

---

**EXERCISE 1–15**

Mitch's Architects Ltd.
Balance Sheet
At December 31, 2023

| | | | | |
|---|---|---|---|---|
| *Assets* | | *Liabilities* | | |
| Cash | $ 23,000 | Accounts payable | $30,000 | |
| Accounts receivable | 24,000 | Unearned consulting fees | 15,000 | |
| Office supplies inventory | 2,000 | Total liabilities | | $ 45,000 |
| Prepaid insurance | 7,000 | *Equity* | | |
| Truck | 40,000 | Share capital | $30,400 | |
| Office equipment | 15,000 | Retained earnings | 35,600 | |
| | | Total equity | | 66,000 |
| Total assets | $111,000 | Total liabilities and equity | | $111,000 |

---

**EXERCISE 1–16**

Gillespie Corp.
Income Statement
For the Year Ended May 31, 2023

| | |
|---|---|
| **Revenues** | |
| Service revenue | $382,000 |
| Rent revenue | 90,000 |
| Total Revenue | 472,000 |
| | |
| **Expenses** | |
| Warehouse rent expense | 100,000 |
| Salaries and benefits expense | 110,000 |
| Utilities expense | 42,000 |
| Insurance expense | 15,000 |
| Shop supplies expense | 6,000 |
| Net income | $199,000 |

Gillespie Corp.
Statement of Changes in Equity
At May 31, 2023

| | Share Capital | Retained Earnings | Total Equity |
|---|---|---|---|
| Opening balance | $5,000 | $140,000 | $145,000 |
| Net income | | 199,000 | 199,000 |
| Dividends | | (10,000) | (10,000) |
| Ending balance | $5,000 | $329,000 | $334,000 |

Gillespie Corp.
Balance Sheet
For the Year Ended May 31, 2023

| | | | | |
|---|---|---|---|---|
| *Assets* | | *Liabilities* | | |
| Cash | $ 50,000 | Accounts payable | $130,000 | |
| Accounts receivable | 85,000 | Unearned service revenue | 25,000 | |
| Prepaid advertising | 17,000 | Total liabilities | | $155,000 |
| Shop supplies | 52,000 | *Equity* | | |
| Building | 240,000 | Share capital | $ 5,000 | |
| Office equipment | 45,000 | Retained earnings | 329,000 | |
| | | Total equity | | 334,000 |
| Total assets | $489,000 | Total liabilities and equity | | $489,000 |

**EXERCISE 1–17**

Using the same calculation as the retained earnings column in the statement of changes in equity:

Opening retained earnings + Net income (or minus net loss) – Dividends = Ending retained earnings

**a.** $50,000 + Net income ? – 20,000 = $40,000
Net income = $40,000 – 50,000 + 20,000 = $10,000

**b.** Retained earnings opening balance ? + 150,000 – 40,000 = $130,000
Retained earnings opening balance = $130,000 – 150,000 + 40,000 = $20,000

**c.** $75,000 – 35,000 – Dividends ? = $40,000
Dividends = $40,000 – 75,000 + 35,000 = 0

**EXERCISE 1–18**

| **a.** | **Assets** | = | **Liabilities** | + | **Equity** | |
|---|---|---|---|---|---|---|
| Balances at April 1, 2023 | $100,000 | | $60,000 | | $40,000 | |
| | | | | | 10,000 | April net income(loss) |
| Balances at April 30, 2023 | $180,000 | = | $130,000 | + | $50,000 | |

| **b.** | **Assets** | = | **Liabilities** | + | **Equity** | |
|---|---|---|---|---|---|---|
| Balances at April 1, 2023 | $100,000 | | $60,000 | | $40,000 | |
| | | | | | $50,000 | Shares issued in April |
| | | | | | (40,000) | April net income(loss) |
| Balances at April 30, 2023 | $180,000 | = | $130,000 | + | $50,000 | |

| **c.** | **Assets** | = | **Liabilities** | + | **Equity** | |
|---|---|---|---|---|---|---|
| Balances at April 1, 2023 | $100,000 | | $60,000 | | $40,000 | |
| | | | | | 14,000 | April net income(loss) |
| | | | | | (4,000) | Dividends paid in April |
| Balances at April 30, 2023 | $180,000 | = | $130,000 | + | $50,000 | |

**EXERCISE 1–19**

| **a.** | **Assets** | = | **Liabilities** | + | **Equity** | |
|---|---|---|---|---|---|---|
| Balances at June 1, 2023 | $160,000 | | $100,000 | | $60,000 | |
| | | | | | $70,000 | June net income(loss) |
| | | | | | (20,000) | Dividends paid in June |
| Balances at June 30, 2023 | $200,000 | = | $90,000 | + | $110,000 | |

| **b.** | **Assets** | = | **Liabilities** | + | **Equity** | |
|---|---|---|---|---|---|---|
| Balances at June 1, 2023 | $160,000 | | $100,000 | | $60,000 | |
| | | | | | $40,000 | Shares issued in June |
| | | | | | $90,000 | June net income(loss) |
| | | | | | (80,000) | Dividends paid in June |
| Balances at June 30, 2023 | $200,000 | = | $90,000 | + | $110,000 | |

| **c.** | **Assets** | = | **Liabilities** | + | **Equity** | |
|---|---|---|---|---|---|---|
| Balances at June 1, 2023 | $160,000 | | $100,000 | | $60,000 | |
| | | | | | $130,000 | Shares issued in June |
| | | | | | ($80,000) | June net income(loss) |
| | | | | | -0- | Dividends paid in June |
| Balances at June 30, 2023 | $200,000 | = | $90,000 | + | $110,000 | |

**EXERCISE 1–20**

| | | |
|---|---|---|
| **a.** | 3 | Purchased a truck for cash. |
| **b.** | 1 | Issued share capital for cash. |
| **c.** | 2 | Incurred a bank loan as payment for equipment. |
| **d.** | 3 | Made a deposit for electricity service to be provided to the company in the future. |
| **e.** | 4 | Paid rent expense. |
| **f.** | NT | Signed a new union contract that provides for increased wages in the future. |
| **g.** | NT | Wrote a letter of complaint to the prime minister about a mail strike and hired a messenger service to deliver letters. |
| **h.** | 4 | Received a collect telegram from the prime minister; paid the messenger. |
| **i.** | 1 | Billed customers for services performed. |
| **j.** | 5 | Made a cash payment to satisfy an outstanding obligation. |
| **k.** | 3 | Received a payment of cash in satisfaction of an amount owed by a customer. |
| **l.** | 1 | Collected cash from a customer for services rendered. |
| **m.** | 4 | Paid cash for truck operation expenses. |
| **n.** | 5&4 | Made a monthly payment on the bank loan; this payment included a payment on part of the loan and also an amount of interest expense. (Hint: This transaction affects more than two parts of the accounting equation.) |
| **o.** | 7 | Issued shares in the company to pay off a loan. |

## Chapter 2 Solutions

---

**EXERCISE 2–1**

| a. | b. | | | | |
|---|---|---|---|---|---|
| L | CR | Unearned consulting fees | A | DR | Vehicles |
| A | DR | Prepaid insurance | E | DR | Depreciation expense |
| A | DR | Office supplies | R | CR | Interest income |
| A | DR | Notes receivable | E | DR | Interest expense |
| R | CR | Insurance fee revenue | A | DR | Furniture |
| L | CR | Unearned insurance fee revenue | L | CR | Utilities payable |
| E | DR | Salary and benefits expense | L | CR | Unearned rent revenue |
| A | DR | Small tools and supplies | E | CR | Retained earnings |
| R | CR | Service fees earned | L | CR | Salaries and benefits payable |
| R | CR | Service fees revenue | E | DR | Compensation expense |
| L | CR | Notes payable | R | CR | Interest earned |
| A | DR | Buildings | E | DR | Meals and mileage expense |
| L | CR | Rent payable | L | CR | Unearned service fees |
| E | CR | Share capital | A | DR | Equipment |

## EXERCISE 2–2

| a. | b. | | | | |
|---|---|---|---|---|---|
| L | DR | Unearned consulting fees | A | CR | Vehicles |
| A | CR | Prepaid insurance | E | CR | Depreciation expense |
| A | CR | Office supplies | R | DR | Interest income |
| A | CR | Notes receivable | E | CR | Interest expense |
| R | DR | Insurance fee revenue | A | CR | Furniture |
| L | DR | Unearned insurance fee revenue | L | DR | Utilities payable |
| E | CR | Salary and benefits expense | L | DR | Unearned rent revenue |
| A | CR | Small tools and supplies | E | DR | Retained earnings |
| R | DR | Service fees earned | L | DR | Salaries and benefits payable |
| R | DR | Service fees revenue | E | CR | Compensation expense |
| L | DR | Notes payable | R | DR | Interest earned |
| A | CR | Buildings | E | CR | Meals and mileage expense |
| L | DR | Rent payable | L | DR | Unearned service fees |
| E | DR | Share capital | A | CR | Equipment |

## EXERCISE 2–3

| | Assets | | Liabilities | | Equity | |
|---|---|---|---|---|---|---|
| | *Debit* (increase) | *Credit* (decrease) | *Debit* (decrease) | *Credit* (increase) | *Debit* (decrease) | *Credit* (increase) |
| 2. Borrowed $5,000 from the bank. | 5,000 | | | 5,000 | | |
| 3. Paid $2,000 of the bank loan. | | 2,000 | 2,000 | | | |
| 4. Paid $600 in advance for a one-year insurance policy. | 600 | 600 | | | | |
| 5. Received $500 in advance for next month's rental of office space. | 500 | | | 500 | | |

## EXERCISE 2–4

| | *Debit* | *Credit* |
|---|---|---|
| 2. Purchased equipment on credit. | Equipment | Accounts Payable |
| 3. Paid for a one-year insurance policy. | Prepaid Expenses | Cash |
| 4. Billed a customer for repairs completed today. | Accounts Receivable | Repair Revenue |
| 5. Paid this month's rent. | Rent Expense | Cash |
| 6. Collected the amount billed in transaction 4 above. | Cash | Accounts Receivable |
| 7. Collected cash for repairs completed today. | Cash | Repair Revenue |
| 8. Paid for the equipment purchased in transaction 2 above. | Accounts Payable | Cash |
| 9. Signed a union contract. | No Entry | No Entry |
| 10. Collected cash for repairs to be made for customers next month. | Cash | Unearned Revenue |
| 11. Transferred this month's portion of prepaid insurance that was used to Insurance Expense. | Insurance Expense | Prepaid Expenses |

---

**EXERCISE 2–5**

| # | Cash | | # | Accounts Receivable | | # | Prepaid Rent | | # | Office Supplies Inventory | | # | Equipment | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3,000 | | 6 | 12,000 | | 22 | 5,000 | | 19 | 3,000 | | 8 | 1,000 | |
| 3 | 10,000 | | 7 | 7,000 | | | | | | | | | | |
| 4 | | 2,000 | 9 | | 12,000 | | | | | | | | | |
| 8 | | 1,000 | 13 | | 5,000 | | | | | | | | | |
| 9 | 12,000 | | 20 | 8,000 | | | | | | | | | | |
| 10 | | 5,000 | Bal | 10,000 | | Bal | 5,000 | | Bal | 3,000 | | Bal | 1,000 | |
| 11 | | 1,500 | | | | | | | | | | | | |
| 12 | | 25 | # | Vehicle | | # | Furniture | | # | Computer | | # | Accounts Payable | |
| 13 | 5,000 | | 14 | 30,000 | | 16 | 3,000 | | 21 | 2,500 | | 2 | | 200 |
| 14 | | 10,000 | | | | | | | | | | 15 | 200 | |
| 15 | | 200 | | | | | | | | | | 16 | | 3,000 |
| 17 | 2,000 | | | | | | | | | | | 19 | | 3,000 |
| 18 | 2,000 | | Bal | 30,000 | | Bal | 3,000 | | Bal | 2,500 | | Bal | | 6,000 |
| 22 | | 5,000 | | | | | | | | | | | | |
| Bal | 9,275 | | | | | | | | | | | | | |

| # | Loan Payable | | # | Notes Payable | | # | Unearned Service Revenue | | # | Share Capital | | # | Service Revenue | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | | 10,000 | 5 | | 5,000 | 18 | | 2,000 | 1 | | 3,000 | 6 | | 12,000 |
| 11 | 1,350 | | 14 | | 20,000 | | | | | | | 7 | | 7,000 |
| | | | 21 | | 2,500 | | | | | | | 17 | | 2,000 |
| | | | | | | | | | | | | 20 | | 8,000 |
| Bal | | 8,650 | Bal | | 27,500 | Bal | | 2,000 | Bal | | 3,000 | Bal | | 29,000 |

| # | Electricity Expense | | # | Vehicle/Travel Expense | | # | Repairs Expense | | # | Rent Expense | | # | Salaries Expense | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 200 | | 12 | 25 | | 5 | 5,000 | | 10 | 5,000 | | 4 | 2,000 | |
| Bal | 200 | | Bal | 25 | | Bal | 5,000 | | Bal | 5,000 | | Bal | 2,000 | |

| # | Interest Expense | |
|---|---|---|
| 11 | 150 | |
| Bal | 150 | |

| | |
|---|---|
| Debits | 76,150 |
| Credits | 76,150 |

**EXERCISE 2–6**

BOLA Co.
Trial Balance
At August 31, 2024

| | Debit | Credit |
|---|---|---|
| Cash | $ 9,275 | |
| Accounts receivable | 10,000 | |
| Prepaid rent | 5,000 | |
| Office supplies inventory | 3,000 | |
| Equipment | 1,000 | |
| Vehicle | 30,000 | |
| Furniture | 3,000 | |
| Computer | 2,500 | |
| Accounts payable | | $ 6,000 |
| Loan payable | | 8,650 |
| Notes payable | | 27,500 |
| Unearned service revenue | | 2,000 |
| Share capital | | 3,000 |
| Service revenue | | 29,000 |
| Electricity expense | 200 | |
| Vehicle/travel expense | 25 | |
| Repairs expense | 5,000 | |
| Rent expense | 5,000 | |
| Salaries expense | 2,000 | |
| Interest expense | 150 | |
| | $76,150 | $76,150 |

**EXERCISE 2–7**

BOLA Co.
Income Statement
For the Month Ended August 31, 2024

| | | |
|---|---|---|
| *Revenues* | | |
| Service revenue | | $29,000 |
| *Expenses* | | |
| Electricity expense | $ 200 | |
| Vehicle/Travel expense | 25 | |
| Repairs expense | 5,000 | |
| Rent expense | 5,000 | |
| Salaries expense | 2,000 | |
| Interest expense | 150 | 12,375 |
| Net income | | $16,625 |

BOLA Co.
Statement of Changes in Equity
For the Month Ended August 31, 2024

| | Share Capital | Retained Earnings | Total Equity |
|---|---|---|---|
| Opening balance | $ – | $ – | $ – |
| Shares issuance | 3,000 | | 3,000 |
| Net income | | 16,625 | 16,625 |
| Ending balance | $3,000 | $ 16,625 | $19,625 |

BOLA Co.
Balance Sheet
At August 31, 2024

| | | | | |
|---|---|---|---|---|
| *Assets* | | *Liabilities* | | |
| Cash | $ 9,275 | Accounts payable | $ 6,000 | |
| Accounts receivable | 10,000 | Loan payable | 8,650 | |
| Prepaid rent | 5,000 | Note payable | 27,500 | |
| Office supplies inventory | 3,000 | Unearned service revenue | 2,000 | |
| Equipment | 1,000 | Total liabilities | | $44,150 |
| Vehicle | 30,000 | *Equity* | | |
| Furniture | 3,000 | Share capital | $ 3,000 | |
| Computer | 2,500 | Retained earnings | 16,625 | |
| | | Total equity | | 19,625 |
| Total assets | $63,775 | Total liabilities and equity | | $63,775 |

**EXERCISE 2–8**

| Cash | | Bank Loan | | Share Capital | | Repair Revenue | |
|---|---|---|---|---|---|---|---|
| (1) 5,000 | (2) 900 | (8) 2,500 | (5) 7,500 | | (1) 5,000 | | (3) 1,500 |
| (5) 7,500 | (8) 2,500 | | | | | | |
| (6) 500 | (10) 2,000 | | | | | | |

| Accounts Receivable | | Accounts Payable | | Electricity Expense | |
|---|---|---|---|---|---|
| (3) 1,500 | (6) 500 | (10) 2,000 | (4) 2,000 | (7) 200 | |
| | | | (7) 200 | | |

| Prepaid Expense | | Rent Expense | |
|---|---|---|---|
| (2) 900 | (11) 300 | (11) 300 | |

| Unused Supplies | | Supplies Expense | |
|---|---|---|---|
| (4) 2,000 | (9) 800 | (9) 800 | |

**EXERCISE 2–9**

Cross Corporation
Trial Balance
At December 31, 2023

| | *Account Balances* | |
|---|---|---|
| | *Debits* | *Credits* |
| Cash | $120,400 | |
| Accounts Receivable | 26,000 | |
| Unused Supplies | 6,000 | |
| Land | 8,000 | |
| Building | 120,000 | |
| Accounts Payable | | $30,000 |
| Loan Payable | | 80,000 |
| Share Capital | | 170,000 |
| Commissions Earned | | 5,000 |
| Insurance Expense | 100 | |
| Rent Expense | 1,000 | |
| Salaries Expense | 3,000 | |
| Supplies Expense | 300 | |
| Telephone Expense | 200 | – |
| Total | $285,000 | $285,000 |

---

**EXERCISE 2–10**

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Cash | | 3,000 | |
| | Share Capital | | | 3,000 |
| | (a) To record the issuance of share capital. | | | |
| | Equipment | | 2,000 | |
| | Accounts Payable | | | 2,000 |
| | (b) To record the purchase of equipment on account. | | | |
| | Rent Expense | | 400 | |
| | Cash | | | 400 |
| | (c) To record the payment of rent for the month. | | | |
| | Supplies | | 4,000 | |
| | Accounts Payable | | | 4,000 |
| | (d) To record the purchase of supplies. | | | |
| | Accounts Receivable | | 2,500 | |
| | Repair Revenue | | | 2,500 |
| | (e) To record repair revenue. | | | |
| | Accounts Payable | | 2,000 | |
| | Cash | | | 2,000 |
| | (f) To record the payment on account. | | | |
| | Cash | | 500 | |
| | Accounts Receivable | | | 500 |
| | (g) To record collection of an amount owed. | | | |
| | Cash | | 1,000 | |
| | Equipment | | | 1,000 |
| | (h) To record the sale of equipment. | | | |

---

**EXERCISE 2–11**

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Cash | | XX | |
| | Share Capital | | | XX |
| | (1) To record issuance of share capital | | | |
| | Unused Supplies | | XX | |
| | Cash | | | XX |
| | Accounts Payable | | | XX |
| | (2) To record the purchase of supplies. | | | |
| | Cash | | XX | |
| | Repair Revenue | | | XX |
| | (3) To record revenue earned. | | | |
| | Accounts receivable | | XX | |
| | Repair Revenue | | | XX |
| | (4) To record revenue earned. | | | |
| | Prepaid Expense | | XX | |
| | Cash | | | XX |
| | (5) To record expense paid in advance. | | | |
| | Supplies Expense | | XX | |
| | Accounts Payable | | | XX |
| | (6) To record supplies purchased and used. | | | |
| | Rent Expense | | XX | |
| | Accounts Payable | | | XX |
| | (7) To record rent expense. | | | |
| | Cash | | XX | |
| | Unused Supplies | | | XX |
| | (8) To record the sale of supplies. | | | |
| | Electricity Expense | | XX | |
| | Prepaid Expense | | | XX |
| | (9) To record electricity expense for the month. | | | |
| | Accounts Payable | | XX | |
| | Cash | | | XX |
| | (10) To record payment on account. | | | |
| | Cash | | XX | |
| | Bank Loan | | | XX |
| | (11) To record the issuance of a bank loan. | | | |

## EXERCISE 2–12

**a.** General Ledger T-accounts with transactions:

| Cash | | | |
|---|---|---|---|
| Jan. 1 | 10,000 | Jan. 5 | 200 |
| 11 | 1,300 | 4 | 4,000 |
| | | 30 | 1,800 |
| Bal. | 5,300 | | |

| Accounts Payable | | | |
|---|---|---|---|
| | | Jan. 28 | 450 |

| Share Capital | | | |
|---|---|---|---|
| | | Jan. 1 | 10,000 |

| Service Revenue | | | |
|---|---|---|---|
| | | Jan. 11 | 1,300 |
| | | 31 | 1,600 |
| | | Bal. | 2,900 |

| Accounts Receivable | | | |
|---|---|---|---|
| Jan. 31 | 1,600 | | |

| Rent Expense | | | |
|---|---|---|---|
| Jan. 5 | 200 | | |

| Unused Supplies | | | |
|---|---|---|---|
| Jan. 9 | 4,000 | Jan. 31 | 200 |
| Bal. | 3,800 | | |

| Truck Operation Expense | | | |
|---|---|---|---|
| Jan. 28 | 450 | | |

| Salaries Expense | | | |
|---|---|---|---|
| Jan. 30 | 1,800 | | |

| Supplies Expense | | | |
|---|---|---|---|
| Jan. 31 | 200 | | |

**b.** Trial balance is as follows:

Elgert Corporation
Trial Balance
January 31, 2023

| | *Debit* | *Credit* |
|---|---|---|
| Cash | $5,300 | |
| Accounts receivable | 1,600 | |
| Unused supplies | 3,800 | |
| Accounts payable | | $450 |
| Share capital | | 10,000 |
| Service revenue | | 2,900 |
| Rent expense | 200 | |
| Truck operation expense | 450 | |
| Salaries expense | 1,800 | |
| Supplies expense | 200 | |
| Total | $13,350 | $13,350 |

**c.** Income statement, statement of changes in equity, and the balance sheet are as follows:

Elgert Corporation
Income Statement
For the Month Ended January 31, 2023

| | | |
|---|---|---|
| *Revenue* | | |
| Service revenue | | $2,900 |
| *Expenses* | | |
| Rent expense | $200 | |
| Truck operation expense | 450 | |
| Salaries expense | 1,800 | |
| Supplies expense | 200 | |
| Total expenses | | 2,650 |
| Net income | | $250 |

Elgert Corporation
Statement of Changes in Equity
For the Month Ended January 31, 2023

| | *Share Capital* | *Retained Earnings* | *Total Equity* |
|---|---|---|---|
| Opening balance | $ 0 | $ 0 | $ 0 |
| Shares issued | 10,000 | 0 | 10,000 |
| Net income | 0 | 250 | 250 |
| Ending balance | $10,000 | $250 | $10,250 |

Elgert Corporation
Balance Sheet
At January 31, 2023

| | | |
|---|---|---|
| *Assets* | | |
| Cash | | $5,300 |
| Accounts receivable | | 1,600 |
| Unused supplies | | 3,800 |
| Total assets | | $10,700 |
| *Liabilities* | | |
| Accounts payable | | $450 |
| *Equity* | | |
| Share capital | $10,000 | |
| Retained earnings | 250 | 10,250 |
| Total liabilities and equity | | $10,700 |

---

**EXERCISE 2–13**

1. Adjusting Entry required to correct the error:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Cash | | 1,500 | |
| | Accounts payable | | | 150 |
| | Advertising expense | | | 1,350 |

2. Adjusting Entry required to correct the error:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Salaries expense | | 4,400 | |
| | Cash | | | 4,400 |

3. Adjusting Entry required to correct the error:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Repairs expense | | 1,500 | |
| | Prepaid repairs | | | 1,500 |

4. Adjusting Entry required to correct the error:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Accounts receivable . . . . . | | 3,400 | |
| | Revenue . . . . . | | | 3,400 |

5. Adjusting Entry required to correct the error:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Rent expense . . . . . | | 5,500 | |
| | Cash . . . . . | | | 5,500 |

6. Adjusting Entry required to correct the error:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Revenue . . . . . | | 4,000 | |
| | Unearned revenue . . . . . | | | 4,000 |

7. Adjusting Entry required to correct the error:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Accounts receivable . . . . . | | 8,000 | |
| | Accounts payable . . . . . | | | 8,000 |

8. Adjusting Entry required to correct the error:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Prepaid rent . . . . . | | 10,000 | |
| | Rent expense . . . . . | | | 10,000 |

## Chapter 3 Solutions

---

**EXERCISE 3–1**

**a.** and **c.**

Graham Corporation
General Ledger

| ASSETS | = | LIABILITIES | + | EQUITY |
|---|---|---|---|---|

**Interest Receivable**

| | |
|---|---|
| (a) 110 | |

**Prepaid Insurance**

| | |
|---|---|
| 1,800 | |
| | (b) 1,200 |
| Bal. 600 | |

**Interest Payable**

| | |
|---|---|
| | (c) 90 |

**Salaries Payable**

| | |
|---|---|
| | (d) 450 |

**Unearned Rent**

| | |
|---|---|
| | 700 |
| (e) 500 | |
| | Bal. 200 |

**Interest Earned**

| | |
|---|---|
| | (a) 110 |

**Rent Earned**

| | |
|---|---|
| | (e) 500 |

**Insurance Expense**

| | |
|---|---|
| (b) 1,200 | |

**Interest Expense**

| | |
|---|---|
| (c) 90 | |

**Salaries Expense**

| | |
|---|---|
| (d) 450 | |

**b.**

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Interest Receivable | | 110 | |
| | Interest Earned | | | 110 |
| | (a) | | | |
| | Insurance Expense | | 1,200 | |
| | Prepaid Insurance | | | 1,200 |
| | (b) | | | |
| | Interest Expense | | 90 | |
| | Interest Payable | | | 90 |
| | (c) | | | |
| | Salaries Expense | | 450 | |
| | Salaries Payable | | | 450 |
| | (d) | | | |
| | Unearned Rent | | 500 | |
| | Rent Earned | | | 500 |
| | (e) | | | |

**d.**

| | |
|---|---|
| *Revenues* | |
| Interest Earned | $110 |
| Rent Earned | 500 |
| *Expenses* | |
| Insurance Expense | $1,200 |
| Interest Expense | 90 |
| Salaries Expense | 450 |

---

**EXERCISE 3–2**

**a.** The adjustments column is as follows:

| | Lauer Corporation | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Trial Balance | | | Adjustments | | | Adjusted Trial Balance | |
| | *Dr.* | *Cr.* | | *Dr.* | | *Cr.* | *Dr.* | *Cr.* |
| Cash | $4,000 | | | | | | $4,000 | |
| Accounts Receivable | 5,000 | | | | | | 5,000 | |
| Prepaid Insurance | 3,600 | | | | (a) | $300 | 3,300 | |
| Prepaid Rent | 1,000 | | | | (b) | 500 | 500 | |
| Truck | 6,000 | | | | | | 6,000 | |
| Accumulated Depreciation – Truck | | | | | (c) | 1,500 | | $1,500 |
| Accounts Payable | | $7,000 | | | (d) | 400 | | 7,400 |
| Salaries Payable | | | | | (e) | 1,000 | | 1,000 |
| Unearned Rent | | 1,200 | (f) | $600 | | | | 600 |
| Share Capital | | 2,700 | | | | | | 2,700 |
| Revenue | | 25,000 | | | | | | 25,000 |
| Rent Earned | | | | | (f) | 600 | | 600 |
| Advertising Expense | 700 | | | | | | 700 | |
| Commissions Expense | 2,000 | | | | | | 2,000 | |
| Depreciation Expense | | | (c) | 1,500 | | | 1,500 | |
| Insurance Expense | | | (a) | 300 | | | 300 | |
| Interest Expense | 100 | | (d) | 400 | | | 500 | |
| Rent Expense | 5,500 | | (b) | 500 | | | 6,000 | |
| Salaries Expense | 8,000 | | (e) | 1,000 | | | 9,000 | |
| Totals | $35,900 | $35,900 | | $4,300 | | $4,300 | $38,800 | $38,800 |

**b.** The general journal is as follows:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Insurance Expense | | 300 | |
| | Prepaid Insurance | | | 300 |
| | (a) To record expiry of prepaid insurance. | | | |
| | Rent Expense | | 500 | |
| | Prepaid Rent | | | 500 |
| | (b) To record expiry of prepaid rent. | | | |
| | Depreciation Expense | | 1,500 | |
| | Accumulated Depreciation – Truck | | | 1,500 |
| | (c) To record truck depreciation. | | | |
| | Interest Expense | | 400 | |
| | Accounts Payable | | | 400 |
| | (d) To accrue interest. | | | |
| | Salaries Expense | | 1,000 | |
| | Salaries Payable | | | 1,000 |
| | (e) To accrue unpaid salaries. | | | |
| | Unearned Rent | | 600 | |
| | Rent Earned | | | 600 |
| | (f) To record expiry of unearned rent. | | | |

---

**EXERCISE 3–3**

**a.** The general journal is as follows:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Rent Expense | | 200 | |
| | Prepaid Rent | | | 200 |
| | (a) To adjust prepaid rent account to the proper balance. | | | |
| | Office Supplies Expense | | 400 | |
| | Unused Office Supplies | | | 400 |
| | (b) To record the ending balance of supplies on hand. | | | |
| | Income Taxes Expense | | 5,000 | |
| | Income Taxes Payable | | | 5,000 |
| | (c) To record income taxes for the period. | | | |
| | Unearned Commissions | | 1,000 | |
| | Commissions Earned | | | 1,000 |
| | (d) To record the proper balance in the Unearned Commissions account. | | | |
| | Salaries Expense | | 300 | |
| | Salaries Payable | | | 300 |
| | (e) To accrue salaries for the period. | | | |

**b.** Assets would be overstated by $600 [(a): 200 + (b): 400].

Liabilities would be understated by $4,300 [(c): 5,000 − (d): 1,000 + (e): 300].

Revenue would be understated by $1,000 (d).

Expenses would be understated by $5,900 [(a): 200 + (b): 400 + (c): 5,000 + (e): 300].

Equity would be overstated by $4,900 [(a):200 + (b):400 + (c):5,000 − (d):1,000 + (e):300].

---

**EXERCISE 3–4**

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Dec. 31 | Advertising Expense | | 500 | |
| | Prepaid Advertising | | | 500 |
| | To record the expired portion of advertising for the period. | | | |
| 31 | Supplies Expense | | 400 | |
| | Unused Supplies | | | 400 |
| | To record the remaining amount of supplies on hand. | | | |
| 31 | Depreciation Expense – Equipment | | 250 | |
| | Accumulated Depreciation – Equipment | | | 250 |
| | To record the depreciation for the period. | | | |
| 31 | Maintenance Expense | | 200 | |
| | Telephone Expense | | 100 | |
| | Utilities Expense | | 400 | |
| | Commissions Expense | | 800 | |
| | Accounts Payable | | | 1,500 |
| | To record expenses incurred but not yet paid for the period. | | | |
| 31 | Salaries Expense | | 700 | |
| | Salaries Payable | | | 700 |
| | To record salaries accrued for the period. | | | |
| 31 | Unearned Subscriptions | | 5,000 | |
| | Subscription Revenue | | | 5,000 |
| | To record subscriptions earned for the period. | | | |

---

**EXERCISE 3–5**

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Dec. 31 | Depreciation Expense – Truck | | 1,200 | |
| | Accumulated Depreciation – Truck | | | 1,200 |
| | To record additional truck depreciation for the year ($2,500 − 1,300) ($10,000/4 years = $2,500/year). | | | |

## EXERCISE 3–6

Interest expense for the year should be \$12,000 $\times$ 10% $=$ \$1,200. The needed adjusting entry is:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Dec. 31 | Interest Expense . . . . . | | 100 | |
| | Interest Payable . . . . . | | | 100 |
| | To record interest accrued at December 31 (\$1,200 − 1,100). | | | |

## EXERCISE 3–7

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Insurance Expense . . . . . | | 600 | |
| | Prepaid Insurance . . . . . | | | 600 |
| | (a) To record expiry of 6 months insurance. | | | |
| | Supplies Expense . . . . . | | 200 | |
| | Unused Supplies . . . . . | | | 200 |
| | (b) To adjust supplies on hand to physical count. | | | |
| | Telephone Expense . . . . . | | 50 | |
| | Accounts Payable . . . . . | | | 50 |
| | (c) To record account payable at year end. | | | |

## EXERCISE 3–8

1.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Accounts receivable . . . . . | | Dr | |
| | Revenue . . . . . | | | Cr |

2.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Cash . . . . . | | Dr | |
| | Unearned revenue . . . . . | | | Cr |

3.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Unearned revenue . . . . . | | Dr | |
| | Revenue . . . . . | | | Cr |

4.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Repairs expense . . . . . | | Dr | |
| | Accounts payable . . . . . | | | Cr |

5.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Prepaid repairs expense . . . . . | | Dr | |
| | Cash . . . . . | | | Cr |

6.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Repairs expense . . . . . | | Dr | |
| | Prepaid repairs expense . . . . . | | | Cr |

7.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Salaries expense . . . . . | | Dr | |
| | Accrued salaries payable . . . . . | | | Cr |

8.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Depreciation expense . . . . . | | Dr | |
| | Accumulated depreciation, equipment | | | Cr |

---

**EXERCISE 3–9**

1. Last pay date was Monday, March 28, 2024, for work done until Friday, March 25, 2024.
   Number of remaining business days from last pay date to March 31, 2024 is 4 days.
   Total payroll per day: 65 employees × \$80 day = \$5,200 per day
   Total accrued salaries to March 31, 2024: \$5,200 per day × 4 days = \$20,800
   Total payroll per week: \$5,200 × 5 working days per week = \$26,000 per week

2.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Mar 31, 2024 | Salaries expense | | 20,800 | |
| | Accrued salaries payable | | | 20,800 |

3.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Apr 4, 2024 | Salaries expense* | | 5,200 | |
| | Accrued salaries payable | | 20,800 | |
| | Cash | | | 26,000 |

* 5 days per week − 4 days accrued = 1 day not yet expensed × \$5,200 per day = \$5,200

---

**EXERCISE 3–10**

1. Adjusting entry for \$70,000 of revenue earned but not yet billed to the customer.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Accounts receivable | | 70,000 | |
| | Revenue | | | 70,000 |

2. Adjusting entry for \$4,500 of salaries from the last pay date of October 14.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Salaries expense | | 4,500 | |
| | Accrued salaries payable | | | 4,500 |

3. Adjusting entry for \$40,000 of cash received from a customer for revenue not yet earned.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Cash | | 40,000 | |
| | Unearned revenue | | | 40,000 |

4. Adjusting entry for $500 of utilities for October, but not yet paid.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Utilities expense . . . . . | | 500 | |
| | Accounts payable . . . . . | | | 500 |

5. Adjusting entry for $1,300 of cash paid to a supplier for advertising not yet published.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Prepaid advertising expenses . . . . . | | 1,300 | |
| | Cash . . . . . | | | 1,300 |

6. Adjusting entry for October depreciation expense for equipment.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Depreciation expense . . . . . | | 1,000 | |
| | Accumulated depreciation, equipment | | | 1,000 |

Self-Check Trail balance accounts:

Quertin Quick Fix Ltd.
Trial Balance
At October 31, 2024

| | Unadjusted Trial Balance | | Adjustments | | Adjusted Trial Balance | |
|---|---|---|---|---|---|---|
| | Debit | Credit | Debit | Credit | Debit | Credit |
| Accounts payable | | $225,000 | | $ 500 | | $225,500 |
| Accounts receivable | $325,000 | | $ 70,000 | | $395,000 | |
| Accrued salaries payable | | 5,000 | | 4,500 | | 9,500 |
| Accumulated depreciation, equipment | 1,500 | | | 1,000 | | 2,500 |
| Advertising expense | 1,500 | | | | 1,500 | |
| Cash | 80,000 | | 40,000 | 1,300 | 118,700 | |
| Depreciation expense | 800 | | 1,000 | | 1,800 | |
| Equipment | 150,000 | | | | 150,000 | |
| Land | 150,000 | | | | 150,000 | |
| Maintenance service expenses | 1,000 | | | | 1,000 | |
| Notes payable | | 210,000 | | | | 210,000 |
| Office supplies | 5,000 | | | | 5,000 | |
| Prepaid expenses | 15,000 | | 1,300 | | 16,300 | |
| Rent expense | 14,000 | | | | 14,000 | |
| Retained earnings | | 37,800 | | | | 37,800 |
| Salaries expense | 45,000 | | 4,500 | | 49,500 | |
| Service revenue | | 300,000 | | 70,000 | | 370,000 |
| Share capital | | 10,000 | | | | 10,000 |
| Unearned service revenue | | 10,000 | | 40,000 | | 50,000 |
| Utilities expense | 12,000 | | 500 | | 12,500 | |
| | $799,300 | $799,300 | $117,300 | $117,300 | $915,300 | $915,300 |

**EXERCISE 3–11**

Bernard Inc.
Adjusted Trial Balance
December 31, 2023

| | *Debits* | *Credits* |
|---|---|---|
| Prepaid advertising | $1,000 | |
| Supplies | 750 | |
| Equipment | 21,750 | |
| Accumulated depreciation – equipment | | $1,500 |
| Accounts payable | | 13,250 |
| Salaries payable | | 700 |
| Unearned subscriptions | | 10,000 |
| Share capital | | 8,000 |
| Subscription revenue | | 5,000 |
| Advertising expense | 500 | |
| Commissions expense | 800 | |
| Depreciation expense – equipment | 250 | |
| Maintenance expense | 200 | |
| Salaries expense | 10,200 | |
| Supplies expense | 2,500 | |
| Telephone expense | 100 | |
| Utilities expense | 400 | |
| Totals | $38,450 | $38,450 |

**EXERCISE 3–12**

1. Close revenue accounts to income summary account.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Services revenue . . . . . | | 276,000 | |
| | Income summary . . . . . | | | 276,000 |

2. Close expense accounts to income summary account.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Income summary | | 110,780 | |
| | Salaries expense | | | 41,700 |
| | Insurance expense | | | 3,700 |
| | Interest expense | | | 150 |
| | Shop supplies expense | | | 750 |
| | Advertising expense | | | 4,050 |
| | Depreciation expense | | | 2,380 |
| | Repairs expenses | | | 7,800 |
| | Rent expense | | | 22,500 |
| | Income tax expense | | | 4,500 |
| | Utilities expense | | | 23,250 |

3. Close the income summary account to retained earnings.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Income summary | | 165,220 | |
| | Retained earnings | | | 165,220 |

4. Close dividends to retained earnings.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Retained earnings | | 5,000 | |
| | Cash dividends | | | 5,000 |

---

**EXERCISE 3–13**

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Dec. 31 | Commissions Earned | | 20,000 | |
| | Subscriptions Revenue | | 17,630 | |
| | Income Summary | | | 37,630 |
| | To close revenue accounts to income summary. | | | |
| 31 | Income Summary | | 58,400 | |
| | Depreciation Expense – Machinery | | | 900 |
| | Depreciation Expense – Warehouse | | | 1,200 |
| | Insurance Expense | | | 1,800 |
| | Interest Expense | | | 2,365 |
| | Salaries Expense | | | 33,475 |
| | Supplies Expense | | | 15,800 |
| | Utilities Expense | | | 2,860 |
| | To close expense accounts to income summary. | | | |
| 31 | Retained Earnings | | 20,770 | |
| | Income Summary | | | 20,770 |
| | To close net loss in income summary to retained earnings. | | | |
| 31 | Retained Earnings | | 14,000 | |
| | Dividends | | | 14,000 |
| | To close dividends to retained earnings. | | | |

Willis Inc.
Post-Closing Trial Balance
December 31, 2023

| | *Debits* | *Credits* |
|---|---|---|
| Accounts payable | | $4,400 |
| Accounts receivable | $3,600 | |
| Accumulated depreciation – machinery | | $2,800 |
| Accumulated depreciation – warehouse | | 8,000 |
| Bank loan | | 47,600 |
| Cash | 12,000 | |
| Interest payable | | 1,200 |
| Land | 15,000 | |
| Machinery | 20,000 | |
| Retained earnings* | | 1,230 |
| Salaries payable | | 1,970 |
| Share capital | | 52,100 |
| Supplies | 2,500 | |
| Unearned fees | | 800 |
| Warehouse | 67,000 | |
| Totals | $120,100 | $120,100 |

**calculated as $36,000 adjusted retained earnings balance +$37,630 total revenues closed to re-*

*tained earnings —$58,400 total expenses closed to retained earnings —$14,000 dividends closed to retained earnings.*

## Chapter 4 Solutions

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**EXERCISE 4–1**

**a.** The balance sheet is as follows:

Joyes Enterprises Ltd.
Balance Sheet
At December 31, 2024

| | | | |
|---|---|---|---|
| | *Assets* | | |
| *Current* | | | |
| Cash | | $2,000 | |
| Accounts Receivable | | 8,000 | |
| Merchandise Inventory | | 19,000 | |
| Prepaid Insurance | | 1,000 | |
| Total Current Assets | | | $30,000 |
| *Property, Plant, and Equipment* | | | |
| Land | | 5,000 | |
| Buildings | $25,000 | | |
| *Less*: Accum. Dep'n. | 1,000 | 24,000 | |
| Equipment | 20,000 | | |
| *Less*: Accum. Dep'n. | 4,000 | 16,000 | |
| Net Property, Plant, and Equipment | | | 45,000 |
| Total Assets | | | $75,000 |
| | *Liabilities* | | |
| *Current Liabilities* | | | |
| Bank Loan | | $5,000 | |
| Accounts Payable | | 7,000 | |
| Income Taxes Payable | | 3,000 | |
| Total Current Liabilities | | | $15,000 |
| *Non-current Liabilities* | | | |
| Mortgage Payable | | | 5,000 |
| Total Liabilities | | | 20,000 |
| | *Equity* | | |
| Share Capital | | 48,000 | |
| Retained Earnings | | 7,000 | |
| Total Equity | | | 55,000 |
| Total Liabilities and Equity | | | $75,000 |

**b.** Current assets total $30,000. Current liabilities total $15,000. The company appears to have sufficient resources to meet its obligations in the next year.

**c.** Total equity is $55,000. Total liabilities equal $20,000. The ratio is $55,000/20,000 = 2.75 to 1.

**EXERCISE 4–2**

**a.** The building should likely be a non-current asset, as its useful life is generally greater than one fiscal year. Short-term investments are current assets because they are readily marketable, by definition. Unused office supplies are likely current assets, as they will usually be used in the next fiscal period. The bank loan payable is due in 2030 and therefore a non-current liability, as it will not be paid within the next fiscal year. Salaries payable is likely a current liability, as it will be paid in the next fiscal year in all likelihood. The last line on the balance sheet should read "Total Liabilities and Equity". The balance sheet lists a building account but not a land account. Sometimes a company owns a building without owning land, but it is more likely that these two assets should have been separated when they were acquired. Retained earnings should be shown in the equity section. There is no accumulated depreciation recorded for the long-lived assets and there are no income taxes payable recorded. The reasons for these omissions should be investigated.

**b.** The balance sheet is as follows:

Abbey Limited
Balance Sheet
At November 30, 2023

| | | |
|---|---|---|
| | *Assets* | |
| *Current* | | |
| Cash | $1,000 | |
| Short-term Investments | 3,000 | |
| Accounts Receivable | 6,000 | |
| Merchandise Inventory | 3,000 | |
| Unused Supplies | 100 | |
| Total Current Assets | | $13,100 |
| *Property, Plant, and Equipment* | | |
| Building* | 12,000 | |
| Equipment | 1,500 | |
| Truck | 1,350 | |
| Net Property, Plant, and Equipment | | 14,850 |
| Total Assets | | $27,950 |
| | *Liabilities* | |
| *Current* | | |
| Accounts Payable | $5,600 | |
| Notes Payable | 2,000 | |
| Salaries Payable | 250 | |
| Total Current Liabilities | | $7,850 |
| *Non-current* | | |
| Bank Loan | 1,000 | |
| Mortgage Payable | 7,000 | |
| Total Non-current Liabilities | | 8,000 |
| Total Liabilities | | 15,850 |
| | *Equity* | |
| Share Capital | 11,100 | |
| Retained Earnings | 1,000 | |
| Total Equity | | 12,100 |
| Total Liabilities and Equity | | $27,950 |

**Land may need to be separated out.*

**c.** Additional disclosure should be considered for:

- depreciation rates for plant and equipment.
- details about cost and accumulated depreciation amounts for property, plant, and equipment.

- details about debt, including interest rates, due dates, any assets securing the debt, repayment amounts and intervals, and when terms will be re-negotiated.
- details about share capital.

---

**EXERCISE 4–3**

| | | | |
|---|---|---|---|
| 3 | Land used in the normal course of business operations | 5 | Accrued salaries payable |
| 5 | Notes payable, due in four months | 1 | Prepaid advertising |
| 3 | Truck | 8 | Advertising expense |
| 2 | Land held for investment | 5 | Unearned revenue |
| 4 | Copyright | 8 | Service revenue |
| 5 | Accounts payable | 1 | Cash |
| 8 | Cash dividends | 6 | Mortgage payable, due in fifteen years |
| 3 | Building | 5 | Mortgage payable, due in six months |
| 3 | Furniture | 7 | Share capital |
| 1 | Accounts receivable, from customer sales | 1 | Shop supplies |
| 4 | Franchise | 3 | Accumulated depreciation, building |
| 8 | Utilities expense | 8 | Depreciation expense |
| 5 | Utilities payable | 1 | Office supplies |

---

**EXERCISE 4–4**

**a.** 1. Close revenue accounts to income summary account.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Dec 31 | Revenue | | 35,000 | |
| | Income summary | | | 35,000 |

2. Close expense accounts to income summary account.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Dec 31 | Income summary | | 16,600 | |
| | Salaries expense | | | 8,000 |
| | Insurance expense | | | 600 |
| | Supplies and postage expense | | | 3,000 |
| | Rent expense | | | 3,000 |
| | Travel expense | | | 1,500 |
| | Utilities expense | | | 500 |

3. Close the income summary account to retained earnings.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Dec 31 | Income summary . . . . . | | 18,400 | |
| | Retained earnings . . . . . | | | 18,400 |

4. Close dividends to retained earnings: No entry required.

**b.**

Abled Appliance Repair Ltd.
Balance Sheet
At December 31, 2024

| | | | | | |
|---|---|---|---|---|---|
| *Assets* | | | *Liabilities* | | |
| Cash | | $ 80,000 | Accounts payable | | $ 35,000 |
| Accounts receivable | | 66,000 | Unearned consulting fees | | 10,000 |
| Office supplies | | 2,000 | Total current liabilities | | $ 45,000 |
| Prepaid insurance expense | | 5,000 | | | |
| Total current assets | | 153,000 | | | |
| | | | *Equity* | | |
| Property, Plant and Equipment | | | Share capital | $ 1,000 | |
| Land | $20,000 | | Retained earnings | 135,000* | |
| Office equipment | 10,000 | | Total equity | | |
| Accumulated depreciation, | | | Total liabilities and equity | | 136,000 |
| office equipment | (2,000) | 28,000 | | | |
| Total assets | | $181,000 | | | $181,000 |

*Net income $(35{,}000 - 3{,}000 - 8{,}000 - 500 - 1{,}500 - 600 - 3{,}000) = \$18{,}400$
Retained earnings $(\$116{,}600 + 18{,}400) = 135{,}000$

**c.**

Abled Appliance Repair Ltd.
Post-closing Trial Balance
At December 31, 2024

| | Debit | Credit |
|---|---|---|
| Cash | $ 80,000 | |
| Accounts receivable | 66,000 | |
| Office supplies | 2,000 | |
| Prepaid insurance expense | 5,000 | |
| Land | 20,000 | |
| Office equipment | 10,000 | |
| Accumulated depreciation, office equipment | | $ 2,000 |
| Accounts payable | | 35,000 |
| Unearned consulting fees | | 10,000 |
| Share capital | | 1,000 |
| Retained earnings | | 135,000 |
| | $183,000 | $183,000 |

---

**EXERCISE 4–5**

Mystery Company Ltd.
Balance Sheet
At November 30, 2024

| | | | | | |
|---|---|---|---|---|---|
| *Assets* | | | *Liabilities* | | |
| Cash | | $150,650 | Accounts payable | | $ 95,960 |
| Accounts receivable | | 99,520 | Accrued salaries payable | | 58,580 |
| Office supplies | | 1,300 | Current portion of long-term | | |
| Prepaid insurance expense | | 10,000 | note payable | | 72,000 |
| Prepaid rent expense | | 12,000 | Income taxes payable | | 32,500 |
| Total current assets | | 273,470 | Interest payable | | 12,000 |
| | | | Unearned revenue | | 150,000 |
| *Property, Plant and Equipment* | | | Total current liabilities | | 421,040 |
| Building | $270,000 | | | | |
| Accumulated depreciation, building | (43,530) | 226,470 | *Long-term Liabilities* | | |
| Vehicle | 108,000 | | Note payable, due 2033 | | 145,000 |
| Accumulated depreciation, vehicle | (8,650) | 99,350 | Total liabilities | | 566,040 |
| Total property, plant and equipment | | 325,820 | *Equity* | | |
| | | | Share capital | $10,000* | |
| *Intangible Assets* | | | Retained earnings | 74,850 | 84,850 |
| Copyright | | 51,600 | Total liabilities and equity | | $650,890 |
| Total assets | | $650,890 | | | |

* Share capital:
Assets = Liabilities + Equity

| | |
|---|---|
| Total assets | $ 650,890 |
| Less total liabilities | (566,040) |
| Less retained earnings | (74,850) |
| Share capital | $ 10,000 |

---

## EXERCISE 4–6

Hitalle Heights Corp.
Statement of Changes in Equity
For the Period Ended May 31, 2024

| | Share Capital | Retained Earnings | Total Equity |
|---|---|---|---|
| Opening balance | $ 640 | $192,355 | $192,995 |
| Shares issuance | 200 | | 200 |
| Dividends declared | | (2,800) | (2,800) |
| Net income | | 47,759 | 47,759 |
| Ending balance | $ 840 | $237,314 | $238,154 |

Net income $(\$94{,}000 - 1{,}333 - 2{,}520 - 2{,}072 - 84 - 12{,}600 - 840 - 23{,}352 - 420 - 3{,}020) = \$47{,}759$

Hitalle Heights Corp.
Balance Sheet
At May 31, 2024

| | | | | | |
|---|---|---|---|---|---|
| *Assets* | | | *Liabilities* | | |
| Cash | | $ 8,888 | Accounts payable | | $ 13,020 |
| Accounts receivable | | 59,808 | Accrued salaries payable | | 4,872 |
| Shop supplies | | 1,008 | Current portion of long-term | | 5,200 |
| Prepaid rent expense | | 7,162 | note payable* | | 5,200 |
| Total current assets | | 76,866 | Income taxes payable | | 3,320 |
| | | | Interest payable | | 224 |
| | | | Unearned revenue | | 21,000 |
| *Property, Plant and Equipment* | | | Total current liabilities | | 47,636 |
| Land | | 58,048 | | | |
| Furniture | $ 8,400 | | *Long-term Liabilities* | | |
| Accumulated depreciation, furniture | (1,792) | 6,608 | Note payable, due 2033* | | 11,600 |
| Total property, plant and equipment | | 64,656 | Total liabilities | | 59,236 |
| | | | *Equity* | | |
| *Intangible Assets* | | | Share capital | $ 840 | |
| Franchise | | 155,868 | Retained earnings | 237,314 | 238,154 |
| Total assets | | $297,390 | Total liabilities and equity | | $297,390 |

# Chapter 5 Solutions

## EXERCISE 5–1

**a.** The completed table is as follows:

| | *2024* | *2023* | *2022* | *2021* |
|---|---|---|---|---|
| Sales | $10,000 | $9,000 | $8,000 | $7,000 |
| Cost of Goods Sold | 7,500 | 6,840 | 6,160 | 5,460 |
| Gross Profit | 2,500 | 2,160 | 1,840 | 1,540 |
| Gross Profit Percentage | 25% | 24% | 23% | 22% |

**b.** The company's gross profit percentage has increased each year from 2021 to 2024 inclusive. This means it is earning more per sales dollar each year (from 22 cents per dollar in 2021 to 25 cents per dollar in 2024). This is a favourable trend because the company is generating more gross profit to apply against operating and other expenses which hopefully results in greater net income.

## EXERCISE 5–2

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jul. 6 | Merchandise Inventory | | 600 | |
| | Accounts Payable | | | 600 |
| | To record purchase of inventory on account. | | | |
| 9 | Accounts Payable | | 200 | |
| | Merchandise Inventory | | | 200 |
| | To record returns made on goods purchased. | | | |
| 15 | Accounts Payable | | 400 | |
| | Cash | | | 396 |
| | Merchandise Inventory | | | 4 |
| | To record payment made within discount period. | | | |

## EXERCISE 5–3

**a.** The Horne Inc. general journal is as follows:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| May 5 | Accounts Receivable | | 4,000 | |
| | Sales | | | 4,000 |
| | Cost of Goods Sold | | 2,500 | |
| | Merchandise Inventory | | | 2,500 |
| 7 | Sales Returns and Allowances | | 500 | |
| | Accounts Receivable | | | 500 |
| | Merchandise Inventory | | 300 | |
| | Cost of Goods Sold | | | 300 |
| 15 | Cash | | 3,430 | |
| | Sales Discounts | | 70 | |
| | Accounts Receivable | | | 3,500 |
| 31 | Cost of Goods Sold | | 100 | |
| | Merchandise Inventory | | | 100 |
| | (3,000 beginning MI − 2,500 + 300 = 800 unadjusted MI balance; 800 − 700 = 100 shrinkage) | | | |

**b.** The Sperling Renovations Ltd. general journal is as follows:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| May 5 | Merchandise Inventory | | 4,000 | |
| | Accounts Payable | | | 4,000 |
| 7 | Accounts Payable | | 500 | |
| | Merchandise Inventory | | | 500 |
| 15 | Accounts Payable | | 3,500 | |
| | Merchandise Inventory | | | 70 |
| | Cash | | | 3,430 |
| | The shrinkage adjustment recorded by Horne Inc. does not impact Sperling in any way therefore no adjusting entry is required in Sperling's records. | | | |

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## EXERCISE 5–4

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Mar 1 | Merchandise inventory | | 25,000 | |
| | Accounts payable | | | 25,000 |
| | (Purchase, terms 2/10, net 30) | | | |
| Mar 3 | Accounts receivable | | 5,000 | |
| | Cost of goods sold | | 2,600 | |
| | Sales | | | 5,000 |
| | Merchandise inventory | | | 2,600 |
| | (Sale, terms 1/10, n30) | | | |

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Mar 4 | Merchandise inventory | | 100 | |
| | Sales returns and allowances | | 200 | |
| | Accounts receivable | | | 200 |
| | Cost of goods sold | | | 100 |
| | (Sales return, Mar 3) | | | |
| Mar 5 | Merchandise inventory | | 15,000 | |
| | Cash | | | 15,000 |
| | (Cash purchase) | | | |
| Mar 6 | Merchandise inventory | | 200 | |
| | Cash | | | 200 |
| | (Freight) | | | |
| Mar 7 | Cash | | 500 | |
| | Merchandise inventory | | | 500 |
| | (Allowance for damaged inventory) | | | |
| Mar 8 | Accounts receivable | | 25,000 | |
| | Cost of goods sold | | 13,000 | |
| | Sales | | | 25,000 |
| | Merchandise inventory | | | 13,000 |
| | (Sale, terms 1.5/10, n30) | | | |
| Mar 9 | Delivery expense or freight-out | | 500 | |
| | Cash | | | 500 |
| | (Shipping costs for Mar 8 sale) | | | |
| Mar 11 | Accounts payable | | 12,500 | |
| | Merchandise inventory | | | 250 |
| | Cash | | | 12,250 |
| | (50% payment of Mar 1 purchase) | | | |
| Mar 13 | Cash | | 4,950 | |
| | Sales discount | | 50 | |
| | Accounts receivable | | | 5,000 |
| | (Collect Mar 3 sale) | | | |
| Mar 15 | Office supplies inventory | | 540 | |
| | Account payable | | | 540 |
| | (Purchase 1/10, n30) | | | |
| Mar 18 | No Entry | | | |
| Mar 20 | Cash | | 6,010 | |
| | Accounts receivable | | | 6,010 |
| | (Collect account) | | | |
| Mar 25 | Account payable | | 540 | |
| | Office supplies inventory | | | 5.40 |
| | Cash | | | 534.60 |
| | (Payment of Mar 15 purchase) | | | |

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Mar 27 | Cash | | 12,500 | |
| | Cost of goods sold | | 5,000 | |
| | Sales | | | 12,500 |
| | Merchandise inventory | | | 5,000 |
| | (Cash sale) | | | |
| Mar 31 | Account payable | | 12,500 | |
| | Cash | | | 12,500 |
| | (Payment of Mar 1 balance, discount expired) | | | |

## EXERCISE 5–5

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Apr 1 | Merchandise inventory | | 15,000 | |
| | Cash | | | 15,000 |
| | (Cash purchase) | | | |
| Apr 3 | Cash | | 8,000 | |
| | Cost of goods sold | | 4,600 | |
| | Sales | | | 8,000 |
| | Merchandise inventory | | | 4,600 |
| | (Cash sale) | | | |
| Apr 5 | Merchandise inventory | | 10,000 | |
| | Accounts payable | | | 10,000 |
| | (Purchase, terms 1/10, n30) | | | |
| Apr 7 | Accounts payable | | 2,000 | |
| | Merchandise inventory | | | 2,000 |
| | (Purchase returns) | | | |
| Apr 8 | Accounts receivable | | 8,000 | |
| | Cost of goods sold | | 4,000 | |
| | Merchandise inventory | | | 4,000 |
| | Sales | | | 8,000 |
| | (Sale, terms 2/10, n30) | | | |
| Apr 9 | Delivery expense or freight-out | | 500 | |
| | Cash | | | 500 |
| | (Shipping costs for Apr 8 sale) | | | |
| Apr 10 | Merchandise inventory | | 1,000 | |
| | Sales returns and allowances | | 400 | |
| | Cost of goods sold | | | 400 |
| | Cash | | | 1,000 |
| | (Sale return) | | | |

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Apr 10 | Sales allowance | | 200 | |
| | Accounts receivable | | | 200 |
| | (Apr 8 sale, sales allowance) | | | |
| Apr 12 | Merchandise inventory | | 22,000 | |
| | Accounts payable | | | 22,000 |
| | (Purchase, terms 1/10, n30) | | | |
| Apr 15 | Accounts payable | | 8,000 | |
| | Merchandise inventory | | | |
| | Cash ($10,000 − 2,000) × 0.99 | | | 7,920 |
| | (Paid Apr 5 purchase) | | | |
| Apr 16 | Merchandise inventory | | 600 | |
| | Cash | | | 600 |
| | (Freight on Apr 12 purchase) | | | |
| Apr 18 | Cash | | 5,000 | |
| | Sales discount | | 102 | |
| | Accounts receivable ($5,000 ÷ 0.98) | | | 5,102 |
| | (Partial payment on account) | | | |
| Apr 27 | Accounts payable | | 22,000 | |
| | Cash | | | 22,000 |
| | (Paid account, discount forfeited) | | | |
| Apr 27 | Cash | | 20,000 | |
| | Cost of goods sold | | 10,000 | |
| | Merchandise inventory | | | 10,000 |
| | Sales | | | 20,000 |
| | (Cash sale) | | | |

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**EXERCISE 5–6**

**a.** The income statement is as follows:

Smith Corp.
Income Statement
Year Ended June 30, 2023

| | | | |
|---|---|---|---|
| Sales | | | $72,000 |
| Less: Sales returns and allowances | | | 2,000 |
| Net sales | | | $70,000 |
| Cost of goods sold | | | 50,000 |
| Gross profit | | | $20,000 |
| Operating expenses: | | | |
| Selling expenses: | | | |
| Advertising expense | $1,500 | | |
| Commissions expense | 4,000 | | |
| Delivery expense | 500 | | |
| Rent expense - store | 1,500 | | |
| Sales salaries expense | 2,000 | | |
| Total selling expenses | | $9,500 | |
| General and administrative expenses: | | | |
| Depreciation expense - equipment | 500 | | |
| Insurance expense | 1,000 | | |
| Office salaries expense | 3,000 | | |
| Rent expense - office | 1,000 | | |
| Total general and administrative expenses | | 5,500 | |
| Total operating expenses | | | 15,000 |
| Income before income tax expense | | | 5,000 |
| Income tax expense | | | 1,000 |
| Net income | | | $4,000 |

**b.** The gross profit percentage, rounded to two decimal places, is 28.57% calculated as 100 × (20,000/70,000).

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**EXERCISE 5–7**

| | | | | | |
|---|---|---|---|---|---|
| Inventory, opening balance | $ 10,000 | $ 53,000 | $ 561,800 | $ 168,540 | 50,562 |
| Plus: purchases | 30,000 | 159,000 | 1,685,400 | 1,011,240 | 606,744 |
| Total goods available for sale | 40,000 | 212,000 | 2,247,200 | 1,179,780 | 657,306 |
| Less: ending inventory | 15,000 | 79,500 | 842,700 | 556,180 | 100,000 |
| Cost of goods sold | 25,000 | 132,500 | 1,404,500 | 623,600 | 557,306 |
| | | | | | |
| Sales | 55,000 | 240,000 | 1,600,000 | 900,000 | 700,000 |
| Less: cost of goods sold | 25,000 | 132,500 | 1,404,500 | 623,600 | 557,306 |
| Gross profit | 30,000 | 107,500 | 195,500 | 276,400 | 142,694 |
| Less: operating expenses | 12,000 | 63,600 | 275,000 | 250,000 | 145,000 |
| Net income/(loss) | 18,000 | 43,900 | (79,500) | 26,400 | (2,306) |
| Gross profit/sales (%) | 54.55% | 44.79% | 12.22% | 30.71% | 0 |

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**EXERCISE 5–8**

**a.** Closing entries:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| June 30 | Sales | | 72,000 | |
| | Income Summary | | | 72,000 |
| | (to close credit balance temporary accounts) | | | |
| 30 | Income Summary | | 68,000 | |
| | Sales Returns and Allowances | | | 2,000 |
| | Cost of Goods Sold | | | 50,000 |
| | Advertising Expense | | | 1,500 |
| | Commissions Expense | | | 4,000 |
| | Delivery Expense | | | 500 |
| | Rent Expense – Store | | | 1,500 |
| | Sales Salaries Expense | | | 2,000 |
| | Depreciation Expense – Equipment | | | 500 |
| | Insurance Expense | | | 1,000 |
| | Office Salaries Expense | | | 3,000 |
| | Rent Expense – Office | | | 1,000 |
| | Income Tax Expense | | | 1,000 |
| | (to close debit balance temporary accounts) | | | |
| 30 | Income Summary | | 4,000 | |
| | Retained Earnings | | | 4,000 |
| | (to close balance in Income Summary to Retained Earnings) | | | |
| 30 | Retained Earnings | | 2,000 | |
| | Dividends | | | 2,000 |
| | (to close Dividends to Retained Earnings) | | | |

**b.** The June 30, 2023 post-closing balance in Retained Earnings is $20,000 calculated as:

| Retained Earnings | | | |
|---|---|---|---|
| | | 18,000 | Beginning Balance |
| Dividends | 2,000 | 4,000 | Net Income |
| | | 20,000 | Ending Balance |

---

**EXERCISE 5–9**

| | *A* | *B* | *C* | *D* |
|---|---|---|---|---|
| Opening Inventory | 500 | 184 | 112 | 750 |
| Purchases | 1,415 | 344 | 840 | 5,860 |
| Transportation-In | 25 | 6 | 15 | 10 |
| Cost of Goods Available for Sale | 1,940 | 534 | 967 | 6,620 |
| Ending Inventory | 340 | 200 | 135 | 880 |
| Cost of Goods Sold | 1,600 | 334 | 832 | 5,740 |

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**EXERCISE 5–10**

| | |
|---|---|
| Opening Inventory | 375 |
| Purchases | 2,930 |
| Less: Purchases Discounts | 5 |
| Less: Purchases Returns and Allowances | 20 |
| Transportation-In | 105 |
| Less: Ending Inventory | 440 |
| Cost of Goods Sold | 2,945 |

---

**EXERCISE 5–11**

**a.** The completed table is as follows:

| | *A* | *B* | *C* | *D* |
|---|---|---|---|---|
| Sales | $300 | $150 | $195 | $90 |
| Opening Inventory | 80 | 40 | 40 | 12 |
| Purchases | 240 | 120 | 150 | 63 |
| Cost of Goods Available for Sale | 320 | 160 | 190 | 75 |
| Ending Inventory | (120) | (60) | (60) | (15) |
| Cost of Goods Sold | 200 | 100 | 130 | 60 |
| Gross Profit | $100 | $50 | $65 | $30 |
| Gross Profit percentage | 33.33% | 33.33% | 33.33% | 33.33% |

**b.** All four companies have the same gross profit percentage of 33.33% which means each is contributing equally to operating expenses. In terms of real dollars, Company A is doing the best because its gross profit is $100.

## Chapter 6 Solutions

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**EXERCISE 6–1**

| | | *Purchased (Sold)* | | | | *Balance* | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| *Date* | | *Units* | | *Unit Cost* | *COGS* | *Units* | | *Unit Cost* | | *Total Cost* |
| Jan. 1 | Opening Inventory | | | | | 100 | × | $1 | = | $100 |
| 7 | Purchase #1 | 10 | × | $2 | | 100 | × | 1 | | |
| | | | | | | 10 | × | 2 | | 120 |
| 9 | Sale #1 | (80) | × | 1 | ($80) | 20 | × | 1 | | |
| | | | | | | 10 | × | 2 | | 40 |
| 21 | Purchase #2 | 20 | × | 3 | | 20 | × | 1 | | |
| | | | | | | 10 | × | 2 | | |
| | | | | | | 20 | × | 3 | | 100 |
| 24 | Sale #2 | (20) | × | 1 | | | | | | |
| | | (10) | × | 2 | (70) | **10** | × | **3** | = | **30** |
| | | (10) | × | 3 | | | | | | |
| | Total COGS | | | | **$150** | | | | | |

---

**EXERCISE 6–2**

| | | *Purchased (Sold)* | | | | | *Balance* | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *Date* | | *Units* | | *Unit Cost* | | *COGS* | *Units* | | *Unit Cost* | | *Total Cost* |
| Jan. 1 | Opening Inventory | | | | | | 100 | × | $1 | = | $100 |
| 7 | Purchase #1 | 10 | × | $2 | | | 100<br>10 | ×<br>× | 1<br>2 | | <br>120 |
| 9 | Sale #1 | (72)<br>(8) | ×<br>× | 1<br>2 | | ($72)<br>($16) | 28<br>2 | ×<br>× | 1<br>2 | | <br>32 |
| 21 | Purchase #2 | 20 | × | 3 | | | 28<br>2<br>20 | ×<br>×<br>× | 1<br>2<br>3 | | <br>92 |
| 24 | Sale #2 | (23)<br><br>(17) | ×<br><br>× | 1<br><br>3 | | (74) | **5**<br>**2**<br>**3** | ×<br>×<br>× | **1**<br>**2**<br>**3** | = | **18** |
| | Total COGS | | | | | **$162** | | | | | |

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**EXERCISE 6–3**

Weighted Average (per unit costs must be rounded to two decimal places)

| | | *Purchased (Sold)* | | | | | *Balance* | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *Date* | | *Units* | | *Unit Cost* | | *COGS* | *Units* | | *Unit Cost* | | *Total Cost* |
| Jan. 1 | Opening Inventory | | | | | | 2,000 | | $0.50 | = | $1,000 |
| 5 | Sales #1 | (1,200) | × | $0.50 | | **($600)** | 800 | | | | 400 |
| 6 | Purchase #1 | 1,000 | × | 2.00 | | | 1,800 | | 1.33[1] | | 2,400 |
| 10 | Purchase #2 | 500 | × | 1.00 | | | 2,300 | | 1.26[2] | | 2,900 |
| 16 | Sale #2 | (2,000) | × | 1.26 | = | **(2,520)** | 300 | | | | 380 |
| 21 | Purchase #3 | 1,000 | × | 2.50 | | | 1,300 | | 2.22[3] | | **$2,880** |

[1][$400 + (1,000 × $2)]/(800 + 1,000) = $1.33/unit (rounded) [2][$2,400 + (500 × 1)]/(1,800 + 500) = $1.26/unit (rounded) [3][$380 + (1,000 × 2.50)]/(300 + 1,000) = $2.22/unit (rounded)

**a.** The entry for the January 5 sale:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jan. 5 | Accounts Receivable . . . . . | | 6,000 | |
| | Sales . . . . . | | | 6,000 |
| | Cost of Goods Sold . . . . . | | 600 | |
| | Merchandise Inventory . . . . . | | | 600 |
| | To record Jan. 5 sales: 1,200 units × $5.00/unit selling price = $6,000. | | | |

**b.** The entry for the January 16 sale:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jan. 16 | Accounts Receivable . . . . . | | 12,000 | |
| | Sales . . . . . | | | 12,000 |
| | Cost of Goods Sold . . . . . | | 2,520 | |
| | Merchandise Inventory . . . . . | | | 2,520 |
| | To record Jan. 16 sales: 2,000 units × $6.00/unit selling price = $12,000. | | | |

**c.** Per the above table, there are 1,300 units on hand @ $2.22 (rounded), for a total ending inventory cost of $2,880. Be careful to note that the total ending inventory cost of $2,880 is ***NOT*** calculated as 1,300 units × the average unit cost of $2.22. The $2,880 is calculated as the inventory balance of $380 on January 16 plus the January 21 purchase of $2,500.

---

**EXERCISE 6–4**

N/E = No Effect; O = Overstated; U = Understated

| | *2022 Statements* | | | | *2023 Statements* | | | |
|---|---|---|---|---|---|---|---|---|
| *Errors* | *Opening Invent.* | *Ending Invent.* | *2022 Total Assets* | *2022 Net Income* | *Opening Invent.* | *Ending Invent.* | *2023 Total Assets* | *2023 Net Income* |
| 1. Goods purchased in 2022 were included in the December 31, 2022 inventory, but the transaction was not recorded until early 2023. | N/E | U | U | U | U | N/E | N/E | O |
| 2. Goods purchased in 2023 were included in December 31, 2022 inventory, and the transaction was recorded in 2022. | N/E | O | O | O | O | N/E | N/E | U |

**EXERCISE 6–5**

**a.** i. Ending inventory for 2021 was understated by $2,000. Thus, cost of goods sold should have been $18,000 and gross profit, $12,000. Because of this mistake, the 2022 opening inventory was also understated by $2,000, causing cost of goods sold to be understated by $2,000 and gross profit overstated by $2,000; gross profit in 2022 should have been $15,000. There is no impact on 2023 as a result of the error.

ii. The 2023 ending inventory was overstated by $5,000. Thus, cost of goods sold should have been $30,000 and gross profit, $20,000. This error does not impact 2021 or 2022.

**b.** For 2021, the merchandise inventory on the balance sheet was understated by $2,000. Thus, the total assets were $2,000 less than they should have been. For 2022, there is no effect on the balance sheet, as the error is in opening inventory. For 2023, the ending inventory in the balance sheet is overstated by $5,000, which means that total assets were overstated by $5,000.

**EXERCISE 6–6**

**a.** LCNRV on a unit-by-unit basis: $(2 \times \$50) + (3 \times \$75) + (4 \times \$20) = \$405$

Therefore, LCNRV $= \$405$ on a unit-by-unit basis.

**b.** LCNRV on a group inventory basis: Total cost of the group: $(2 \times \$50) + (3 \times \$150) + (4 \times \$25) = \$650$ Total NRV of the group: $(2 \times \$60) + (3 \times \$75) + (4 \times \$20) = \$425$

Therefore, LCNRV $= \$425$ on a group inventory basis.

**EXERCISE 6–7**

**a.** Estimated amount of inventory lost in the fire:

| | | | |
|---|---|---|---|
| Sales | | $300,000 | 100% |
| *Cost of Goods Sold:* | | | |
| Opening Inventory | $80,000 | | |
| Purchases | 150,000 | | |
| Cost of Goods Available | 230,000 | | |
| Ending Inventory (estimated) | (iii) | | |
| Cost of Goods Sold | | (ii) | 65% |
| Gross Profit | | (i) | 35% |

(i) Gross Profit $= 35\%$ of Sales
$= 35\% \times \$300{,}000$
$= \$105{,}000$

(ii) Cost of Goods Sold $=$ Sales $-$ Gross Profit
$= \$300{,}000 - 105{,}000$
$= \$195{,}000$

(iii) Estimated Ending Inventory $=$ Cost of Goods Available $-$ Total Cost of Goods Sold
$= \$230{,}000 - 195{,}000$
$= \$35{,}000$

**b.** Balton lost about $35,000 of inventory in the fire and is claiming $45,000. This does not appear reasonable.

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**EXERCISE 6–8**

**a.** Merchandise inventory turnover for each of the years 2022 to 2025:

| | *2025* | *2024* | *2023* | *2022* | *2021* |
|---|---|---|---|---|---|
| Cost of Goods Sold | 370,000 | 400,000 | 420,000 | 440,000 | 450,000 |
| Merchandise Inventory | 120,000 | 111,250 | 88,750 | 111,250 | 88,750 |
| Merchandise Inventory Turnover | 3.2 | 4 | 4.2 | 4.4 | |

**b.** The change in Able Corp.'s Merchandise Inventory Turnover ratio is unfavourable because inventory is being sold at a slower rate from 2022 to 2025, from 4.4 times per year in 2022 to 3.2 times per year in 2025.

## Chapter 7 Solutions

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**EXERCISE 7–1**

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Mar. 1 | Petty Cash | | 200 | |
| | Cash | | | 200 |
| 12 | Office Supplies Expense | | 60 | |
| | Maintenance Expense | | 35 | |
| | Miscellaneous Selling Expense | | 25 | |
| | Cash | | | 120 |
| 18 | Petty Cash | | 200 | |
| | Cash | | | 200 |
| 25 | Office Supplies Expense | | 75 | |
| | Delivery Expense | | 30 | |
| | Cash | | | 105 |
| 28 | Cash | | 50 | |
| | Petty Cash | | | 50 |

---

**EXERCISE 7–2**

Ferguson Corp.
Bank Reconciliation
At December 31, 2023

| | | | | | |
|---|---|---|---|---|---|
| Cash per general ledger, Dec. 31 | | $5,005 | Cash per bank statement, Dec. 31 | | $7,000 |
| *Add*: | Note collected by bank | 1,300 | *Add*: | Error Fluet Inc. cheque | 200 |
| | Interest on note | 25 | | Outstanding deposit | 700 |
| *Less*: | Bank service charges | (30) | *Less*: | Outstanding cheques | (1,600) |
| Adjusted Cash balance, Dec. 31 | | $6,300 | Adjusted Cash balance, Dec. 31 | | $6,300 |

**Adjusting entries resulting from bank reconciliation:**

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Dec. 31 | Cash | | 1,325 | |
| | Note Receivable | | | 1,300 |
| | Interest Earned | | | 25 |
| | To record the note collected by the bank. | | | |
| 31 | Interest and Bank Charges Expense | | 30 | |
| | Cash | | | 30 |
| | To record service charges from the bank. | | | |

**OR**

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Dec. 31 | Cash | | 1,295 | |
| | Interest and Bank Charges Expense | | 30 | |
| | Note Receivable | | | 1,300 |
| | Interest Earned | | | 25 |
| | To record bank service charges and note collected by the bank. | | | |

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**EXERCISE 7–3**

Gladstone Ltd.
Bank Reconciliation
At March 31, 2023

| | | | | | |
|---|---|---|---|---|---|
| Cash per general ledger, Mar. 31 | | $2,531 | Cash per bank statement, Mar. 31 | | $1,500 |
| *Add*: | Error cheque No. 4302 | 27 | *Add*: | Outstanding deposit | 1,000 |
| | Note receivable | 250 | | Error re. Global | 250 |
| | Interest on note | 50 | | | |
| *Less*: | Service charges – March | (20) | *Less*: | Outstanding cheques | (622) |
| | Service charges – Note | (10) | | | |
| | NSF cheque | (700) | | | |
| Adjusted Cash balance, Mar. 31 | | $2,128 | Adjusted Cash balance, Mar. 31 | | $2,128 |

**Adjusting entries:**

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Mar. 31 | Cash | | 27 | |
| | Office Supplies Expense | | | 27 |
| | To correct ck. no. 4302 | | | |
| | Cash | | 290 | |
| | Interest and Bank Charges Expense | | 10 | |
| | Note Receivable | | | 250 |
| | Interest Earned | | | 50 |
| | To record note collected by the bank. | | | |
| | Interest and Bank Charges Expense | | 20 | |
| | Cash | | | 20 |
| | To record service charges for March. | | | |
| | Accounts Receivable | | 700 | |
| | Cash | | | 700 |
| | To record NSF cheque returned. | | | |

**OR**

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Mar. 31 | Interest and Bank Charges Expense . . . . . | | 30 | |
| | Accounts Receivable . . . . . | | 700 | |
| | Office Supplies Expense . . . . . | | | 27 |
| | Note Receivable . . . . . | | | 250 |
| | Interest Earned . . . . . | | | 50 |
| | Cash . . . . . | | | 403 |
| | To record adjustments resulting from March 31, 2023 bank rec. | | | |

---

**EXERCISE 7–4**

**a.** i. Entry to record the estimated uncollectible accounts at December 31, 2023:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Bad Debt Expense . . . . . | | 15,000 | |
| | Allowance for Doubtful Accounts . . . . . | | | 15,000 |
| | (2% × 750,000 = 15,000) | | | |

ii. Allowance for Doubtful Accounts = 3,000 + 15,000 = 18,000

**b.** i. Entry to record the estimated uncollectible accounts at December 31, 2023:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Bad Debt Expense . . . . . | | 11,700 | |
| | Allowance for Doubtful Accounts . . . . . | | | 11,700 |
| | [10% × 147,000] = 14,700 − 3,000 = 11,700 | | | |

ii. Allowance for Doubtful Accounts = 3,000 + 11,700 = 14,700
(or 10% × 147,000)

**c.** There is a difference in the estimates because different methods are used. The first method is based on a percentage of sales; the second on percentage of accounts receivable, a simplified balance sheet method.

**d.** The calculation made in part (a) above better matches revenues and expenses: the revenues (sales) is directly related to the amount that is written off as bad debt expense. The calculation made in part (b) above better matches accounts receivable to allowance for doubtful accounts and thus produces a better balance sheet valuation.

## EXERCISE 7–5

**a.** Amount of bad debt expense in 2022:

| | |
|---|---|
| Allowance for doubtful accounts, Dec. 31, 2021 | $8,000 |
| Written off in 2022 | (2,400) |
| | 5,600 |
| Allowance for doubtful accounts, Dec. 31, 2022 | (9,000) |
| Bad debt expense for 2022 | $3,400 |

**OR**

Allowance for Doubtful Accounts

| | | | |
|---|---|---|---|
| | | **8,000** | Dec. 31/18 Adj. Bal |
| 2022 A/R Write-Offs | **2,400** | | |
| | | **?** | Adj. Entry Dec. 31/19 |
| | | **9,000** | Dec. 31/19 Adj. Bal. |

**b.** Entry recorded at December 31, 2022 to account for bad debts:

General Journal

| Date | Account/Explanation | PR | Debit | Credit |
|---|---|---|---|---|
| Dec. 31 | Bad Debt Expense . . . . . | | 3,400 | |
| | Allowance for Doubtful Accounts . . . . . | | | 3,400 |

**c.** Amount of bad debt expense in 2023:

| | |
|---|---|
| Allowance for doubtful accounts, Dec. 31, 2022 | $ 9,000 |
| Written off in 2023 | (1,000) |
| Recovered in 2023 | 300 |
| | 8,300 |
| Allowance for doubtful accounts, Dec. 31, 2023 | (10,000) |
| Bad debt expense for 2023 | $ 1,700 |

**OR**

Allowance for Doubtful Accounts

| | | | |
|---|---|---|---|
| | | **9,000** | Dec. 31/19 Adj. Bal. |
| 2023 A/R Write-Offs | **1,000** | **300** | 2023 Recovery |
| | | **?** | Adj. Entry Dec. 31/20 |
| | | **10,000** | Dec. 31/20 Adj. Bal. |

Recall that the ending balance in one period becomes the beginning balance in the next.

**d.** Entry recorded at December 31, 2023 to account for bad debts:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Dec. 31 | Bad Debt Expense . . . . . | | 1,700 | |
| | Allowance for Doubtful Accounts . . . . . | | | 1,700 |

---

**EXERCISE 7–6**

Part a:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Mar. 1 | Notes Receivable – West Corp. . . . . | | 40,000.00 | |
| | Accounts Receivable – West Corp. . . . . | | | 40,000.00 |
| | To record 90-day, 3% note receivable. | | | |
| 31 | Interest Receivable . . . . . | | 98.63 | |
| | Interest Revenue (or Interest Earned) . | | | 98.63 |
| | To record accrued interest; 40,000 × 3% × 30/365. | | | |
| May 30 | Cash . . . . . | | 40,295.89 | |
| | Interest Receivable . . . . . | | | 98.63 |
| | Interest Revenue (or Interest Earned) . | | | 197.26 |
| | Notes Receivable – West Corp. . . . . | | | 40,000.00 |
| | To record collection; 40,000 × 3% × 60/365 = 197.26. | | | |
| Jun. 15 | Notes Receivable – Jill Monte . . . . . | | 50,000.00 | |
| | Accounts Receivable – Jill Monte . . . . . | | | 50,000.00 |
| | To record 45-day, 3% note receivable. | | | |
| Jul.30* | Cash . . . . . | | 50,184.93 | |
| | Notes Receivable – Jill Monte . . . . . | | | 50,000.00 |
| | Interest Revenue (or Interest Earned) . | | | 184.93 |
| | To record collection; 50,000 × 3% × 45/365. | | | |

**July 30 is determined by: June 30 − June 15 = 15 days + 30 days in July = 45 days.*

Part b:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| May 30 | Notes Receivable – West Corp.* . . . . . | | 40,295.89 | |
| | Interest Receivable . . . . . | | | 98.63 |
| | Interest Revenue (or Interest Earned) . | | | 197.26 |
| | Notes Receivable – West Corp. . . . . | | | 40,000.00 |
| | To record dishonoured note; 40,000 × 3% × 60/365 = 197.26. | | | |

**When a note is dishonoured, a 'new' note is recorded that includes the interest and principal to be recovered.*

---

**EXERCISE 7–7**

**a.** Acid test ratio

*2022*: $(30{,}000 + 20{,}000)/(12{,}000 + 8{,}000 + 9{,}000) = 1.72$

*2023*: $(42{,}000 + 25{,}000)/(14{,}000 + 9{,}000 + 11{,}000 + 17{,}000) = 1.31$

Accounts receivable turnover ratio

*2022*: $367{,}000/[(20{,}000 + 14{,}000)/2] = 21.59$

*2023*: $375{,}000/[(25{,}000 + 20{,}000)/2] = 16.67$

**b.** The change in both the acid-test and accounts receivable turnover ratios was unfavourable. Although Salzl Corp.'s acid-test is greater than one indicating that it has sufficient quick current assets to cover current liabilities as they come due, that amount decreased from 2022 to 2023. The decrease in the accounts receivable turnover indicates that Salzl Corp. Is collecting receivables at a much slower rate in 2023 than in 2022 which is unfavourable. Receivables should be collected as quickly as possible so the accounts receivable turnover ratio should be as high as possible.

## Chapter 8 Solutions

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**EXERCISE 8–1**

| | |
|---|---|
| f | Battery purchased for truck. |
| a | Commission paid to real estate agent to purchase land. |
| c | Cost of equipment test runs. |
| b | Cost to remodel building. |
| b or c | Cost to replace manual elevator with automatic elevator. |
| a | Cost of sewage system. |
| c | Equipment assembly expenditure. |
| c | Expenditures for debugging new equipment and getting it ready for use. |
| e | Installation of air-conditioner in automobile. |
| b | Insurance paid during construction of building. |
| a | Legal fees associated with purchase of land. |
| f | Oil change for truck. |
| a | Payment for landscaping. |
| a | Expenditures for removal of derelict structures. |
| f | Repair made to building after moving in. |
| f | Repair of collision damage to truck. |
| f | Repair of torn seats in automobile. |
| e | Replacement of engine in automobile. |
| c | Special floor foundations for installation of new equipment. |
| f | Tires purchased for truck. |
| c | Transportation expenditures to bring newly purchased equipment to plant. |

---

**EXERCISE 8–2**

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Land . . . . . | | 75,000 | |
| | Building . . . . . | | 225,000 | |
| | Cash . . . . . | | | 300,000 |
| | Land = \$100,000/\$400,000 × \$300,000 = \$75,000. | | | |
| | Building = \$300,000/\$400,000 × \$300,000 = \$225,000. | | | |

---

**EXERCISE 8–3**

**a.** Cost = \$3,575 + \$100 + \$350 = \$4,025.

**b.** Straight-Line Method:

| *Year* | *Straight-Line* | *Double-Declining Balance* |
|---|---|---|
| 1 | $755* | $4,025 × 40%** = $1,610 |
| 2 | $755 | 2,415 × 40% = 966 |
| 3 | $755 | 1,449 × 40% = 580 |
| 4 | $755 | 869 × 40% = 348 |
| 5 | $755 | 521 × 40% = 208 |

* ($4,025 − 250)/5 years = $755

** (Rate = 2/$n$ where $n$ = useful life; 2/5yrs. = .40 or 40%)

Under the straight-line method, each period is assumed to receive equal benefits from the use of the asset. Under the double-declining balance method, each period is charged a diminishing amount. The straight-line method would be more appropriate if the economic benefits would be used about equally over the years. The double-declining balance method would be better to use if the economic benefits were used up more in the first few years. The DDB method is likely the better choice, given the probability of technological obsolescence of this type of asset.

---

**EXERCISE 8–4**

**a.** Straight-Line Method:

($240,000 − 40,000)/5 years = $40,000 per year

| | | |
|---|---|---|
| 2023 depreciation | = | $40,000 |
| 2024 depreciation | = | 40,000 |
| 2025 depreciation | = | 40,000 |
| 2026 depreciation | = | 40,000 |
| 2027 depreciation | = | 40,000 |
| Total depreciation | = | $200,000* |

*Maximum allowable depreciation = Cost − Residual which is $240,000 − $40,000 = $200,000.

**b.** Double-Declining Balance Method:

Rate = 2/$n$ = 2/5 = 0.40 or 40%

| | |
|---|---|
| 2023 depreciation = $240,000 × 40% = | $ 96,000 |
| 2024 depreciation = ($240,000 − 96,000) × 40% = | 57,600 |
| 2025 depreciation = ($240,000 − 96,000 − 57,600) × 40% = | 34,560 |
| 2026 depreciation = | 11,840* |
| 2027 depreciation = | 0 |
| Total depreciation = | $200,000 |

*Maximum allowable depreciation = $200,000 which is Cost − Residual. Therefore, although the calculation of depreciation for 2026 is:

2026 depreciation = ($240,000 − 96,000 − 57,600 − 34,560) × 40% = 20,736

taking this amount would exceed the maximum allowable total depreciation of $200,000. Therefore, only $11,840 of depreciation can be recorded in 2026. This is calculated as $200,000 maximum allowable − $96,000 depreciation in 2023 − $57,600 depreciation in 2024 − $34,560 depreciation taken in 2025 = $11,840.

---

**EXERCISE 8–5**

**a.** Straight-Line Method:

($110,000 − 40,000)/4 years = $17,500 per year

| | | |
|---|---|---|
| 2023 depreciation | = | $17,500 |
| 2024 depreciation | = | 17,500 |
| 2025 depreciation | = | 17,500 |
| 2026 depreciation | = | 17,500 |
| Total depreciation | = | $70,000* |

*Maximum allowable depreciation = Cost − Residual which is $110,000 − $40,000 = $70,000.

**b.** Double-Declining Balance Method:

Rate = 2/$n$ = 2/4 = 0.50 or 50%

| | |
|---|---|
| 2023 depreciation = $110,000 × 50% = | $55,000 |
| 2024 depreciation = | 15,000* |
| 2025 depreciation = | 0 |
| 2026 depreciation = | 0 |
| Total depreciation = | $70,000 |

*Maximum allowable depreciation = $70,000 which is Cost − Residual. Therefore, although the calculation of depreciation for 2024 is:

2024 depreciation = ($110,000 − 55,000) × 50% = $27,500

taking this amount would exceed the maximum allowable total depreciation of $70,000. Therefore, only $15,000 of depreciation can be recorded in 2024. This is calculated as $70,000 maximum allowable − $55,000 depreciation in 2023 = $15,000.

**EXERCISE 8–6**

**a.** i. Straight-Line Method:
($25,000 − 5,000)/5 years = $4,000 per year
2023 depreciation = $4,000 × 1/2 = **$2,000**
2024 depreciation = **$4,000**

ii. Units-of-Production Method:
($25,000 − 5,000)/500,000 km. = $0.04/km.
2023 depreciation = 120,000 km. × $0.04 = **$4,800***
2024 depreciation = 150,000 km. × $0.04 = **$6,000**
*The 1/2 year rule does not apply under usage methods of calculating depreciation since depreciation is based on units produced and not time.

iii. Double-Declining-Balance Method:
$2/n = 2/5 = 0.40$ or 40% per year
2023 depreciation = $25,000 × 40% = $10,000 × 1/2 yr. = **$5,000**
2024 depreciation = ($25,000 − 5,000) × 40% = **$8,000**

**b.** i. Straight-Line Method:
($25,000 − 5,000)/5 years = $4,000 per year
2023 depreciation = $4,000 × 10/12 = **$3,333**
2024 depreciation = **$4,000**

ii. Units-of-Production Method:
($25,000 − 5,000)/500,000 km. = $0.04/km.
2023 depreciation = 120,000 km. × $0.04 = **$4,800***
2024 depreciation = 150,000 km. × $0.04 = **$6,000**
*The 1/2 year rule does not apply under usage methods of calculating depreciation since depreciation is based on units produced and not time.

iii. Double-Declining-Balance Method:
$2/n = 2/5 = 0.40$ or 40% per year
2023 depreciation = $25,000 × 40% = $10,000 × 10/12 = **$8,333**
2024 depreciation = ($25,000 − 8,333) × 40% = **$6,667**

**EXERCISE 8–7**

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Depreciation Expense – Machinery . . . . . | | 3,333 | |
| | Accumulated Depreciation – Machinery . . . . . | | | 3,333 |
| | To record revised depreciation at Dec. 31, 2025; (60,000 − 0)/3 years = 20,000 depreciation for each of 2023 and 2024; (60,000 − 20,000 − 20,000 − 10,000)/(5 − 2) = 3,333 revised depreciation 2025 | | | |

---

**EXERCISE 8–8**

**a.** General journal entry to record depreciation for the year ended December 31, 2023:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Depreciation Expense – Machinery . . . . . | | 28,000 | |
| | Accumulated Depreciation – Machinery . . . . . | | | 28,000 |
| | To record depreciation at Dec. 31, 2023; (140,000 − 0)/5 years = 28,000 depreciation for December 31, 2023 | | | |

**b.** General journal entry to record revised depreciation for the year ended December 31, 2024:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Depreciation Expense – Machinery . . . . . | | 40,500 | |
| | Accumulated Depreciation – Machinery . . . . . | | | 40,500 |
| | To record revised depreciation at Dec. 31, 2024; Original Machinery: (140,000 − 0)/5 years = 28,000 depreciation; New Component: (50,000 − 0)/4 years = 12,500 depreciation; 28,000 + 12,500 = 40,500 total depreciation at December 31, 2024 | | | |

**NOTE**: Because of componentization, depreciation will likely be recorded on the machinery and the new component separately. Therefore, it is acceptable to record two journal entries instead of one.

---

**EXERCISE 8–9**

**a.** General journal entry to record any impairment losses at December 31, 2023:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Impairment Loss . . . . . | | 22,917 | |
| | Machinery . . . . . | | | 22,917 |
| | To record impairment at Dec. 31, 2023; ($400,000 Cost − $27,083 Accum. Dep. = $372,917 Carrying or Book Value) − $350,000 Recoverable Amount = $22,917 Impairment Loss | | | |

The land's recoverable amount of $115,000 is greater than its carrying or book value of $100,000 therefore there is no impairment.

The building's recoverable amount of $870,000 is greater than its carrying or book value of $855,333 ($890,000 − $34,667) therefore there is no impairment.

**b.** General journal entry to record depreciation for the year ended December 31, 2024:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Depreciation Expense – Building . . . . . | | 32,000 | |
| | Accumulated Depreciation – Building . | | | 32,000 |
| | To record depreciation at Dec. 31, 2024; calculated as ($890,000 − $250,000)/20 years = $32,000 | | | |
| | Depreciation Expense – Machinery . . . . . | | 22,430 | |
| | Accumulated Depreciation – Machinery . . . . . | | | 22,430 |
| | To record depreciation at Dec. 31, 2024; calculated as ($400,000 − $150,000 − $27,083 − $22,917)/(10 − 1 1/12 = 8 11/12 years) = $22,430. Note that the Accum. Dep. of $27,083 represents 1 year and 1 month of depreciation (1 month in 2022 + 12 months in 2023). Therefore, the remainder over which the machinery's cost must be depreciated is the original 10 years less the 1 year and 1 month. | | | |

---

**EXERCISE 8–10**

**a.** Journal entries to record the exchange on the books of:

i. Freeman:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Equipment . . . . . | | 200,000 | |
| | Land . . . . . | | | 125,000 |
| | Gain on Disposal . . . . . | | | 75,000 |
| | The equipment is valued at the fair value of the asset given up. | | | |

ii. The developer:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Land . . . . . | | 240,000 | |
| | Equipment . . . . . | | | 325,000 |
| | Accumulated Depreciation – Equipment . . | | 80,000 | |
| | Loss on Disposal . . . . . | | 5,000 | |
| | To record loss on disposal calculated as: [$325,000 Cost − $80,000 Accumulated Depreciation = $245,000 Carrying Amount] − [$240,000 Proceeds [fair value of equipment)] = $5,000. | | | |

**b.** The developer may be speculating that the land will increase in value in the future beyond the current fair value of the equipment exchanged for the land.

---

**EXERCISE 8–11**

**a.** Equipment sold for $20,000:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Cash . . . . . | | 20,000 | |
| | Accumulated Depreciation – Equipment . . | | 40,000 | |
| | Equipment . . . . . | | | 60,000 |
| | To record sale of equipment for $20,000. | | | |

**b.** Equipment sold for $30,000:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Cash . . . . . | | 30,000 | |
| | Accumulated Depreciation . . . . . | | 40,000 | |
| | Equipment . . . . . | | | 60,000 |
| | Gain on Disposal . . . . . | | | 10,000 |
| | To record gain on disposal calculated as: [$60,000 Cost of Equipment − $40,000 Accumulated Depreciation = $20,000 Carrying Amount (or net book value)] − $30,000 Proceeds of Disposal = $(10,000). | | | |

**c.** Equipment sold for $5,000:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Cash . . . . . | | 5,000 | |
| | Accumulated Depreciation . . . . . | | 40,000 | |
| | Loss on Disposal . . . . . | | 15,000 | |
| | Equipment . . . . . | | | 60,000 |
| | To record loss on disposal calculated as: [$60,000 Cost of Equipment − $40,000 Accumulated Depreciation = $20,000 Carrying Amount (or net book value)] − $5,000 Proceeds of Disposal = $15,000. | | | |

To record loss on disposal calculated as:

| | |
|---|---|
| Cost of equipment | $60,000 |
| Accumulated depreciation | (40,000) |
| Carrying amount (or net book value) | 20,000 |
| Proceeds of disposal | (5,000) |
| Loss on disposal | $15,000 |

---

**EXERCISE 8–12**

**a.** March 1, 2023 to record the purchase of the copyright:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Copyright . . . . . | | 50,000 | |
| | Cash . . . . . | | | 50,000 |
| | To record purchase of copyright. | | | |

**b.** December 31, 2023, Willis's year-end, to record amortization of the copyright:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Amortization Expense . . . . . | | 8,333 | |
| | Accumulated Amortization – Copyright | | | 8,333 |
| | To record amortization; 50,000/5 = 10,000 × 10/12 = 8,333. | | | |

**c.** October 1, 2025, Willis's sale of the copyright to a movie producer for $100,000:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Cash . . . . . | | 100,000 | |
| | Accumulated Amortization – Copyright . . . | | 25,833 | |
| | Copyright . . . . . | | | 50,000 |
| | Gain on Disposal . . . . . | | | 75,833 |
| | To record sale of copyright at a gain; Accumulated amortization = 8,333 for 2023 + 10,000 for 2024 + 7,500 for 2025 = 25,833. | | | |

## Chapter 9 Solutions

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**EXERCISE 9–1**

Ajam Inc.
Partial Balance Sheet
March 31, 2024

| | | |
|---|---|---|
| Current liabilities: | | |
| Accounts payable | $58,000 | |
| Wages payable | 102,000 | |
| Income taxes payable | 92,000 | |
| Note payable, due November 30, 2024 | 64,000 | |
| Current portion of mortgage payable | 80,000 | |
| Total current liabilities | | $396,000 |
| Long-term liabilities: | | |
| Note payable, due May 15, 2026 | $108,000 | |
| Long-term portion of mortgage payable | 240,000 | |
| Total long-term liabilities | | 348,000 |
| Total liabilities | | $744,000 |

---

**EXERCISE 9–2**

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| June 7 | Accounts Receivable . . . . . | | 56,000 | |
| | PST Payable . . . . . | | | 3,500 |
| | GST Payable . . . . . | | | 2,500 |
| | Service Revenue . . . . . | | | 50,000 |
| June 27* | Cash . . . . . | | 56,000 | |
| | Accounts Receivable . . . . . | | | 56,000 |

* The PST and GST collected on June 27 will be paid when due and recorded in a separate entry.

---

**EXERCISE 9–3**

**a.** Entry to record the issuance of the note on July 1, 2024:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| July 1 | Cash . . . . . | | 300,000.00 | |
| | Notes Payable . . . . . | | | 300,000.00 |
| | To record 45-day, 3.5% note issued July 1. | | | |

**b.** Entry to accrue interest on July 31, 2024:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| July 31 | Interest Expense . . . . . | | 863.01 | |
| | Interest Payable . . . . . | | | 863.01 |
| | To record accrued interest; 300,000 $\times$ 3.5% $\times$ 30/365. | | | |

**c.** August 15, 2024 (July 31 $-$ July 1 $=$ 30 days $+$ August 15 $=$ 45 days)

**d.** Entry to record the payment of the note on the due date:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Aug. 15 | Notes Payable . . . . . | | 300,000.00 | |
| | Interest Payable . . . . . | | 863.01 | |
| | Interest Expense . . . . . | | 431.51 | |
| | Cash . . . . . | | | 301,294.52 |
| | To record payment of note; 300,000 $\times$ 15/365 $\times$ 3.5% $=$ 431.51. | | | |

## EXERCISE 9–4

**a.** Entry to record the estimated warranty liability for January:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jan. 23 | Warranty Expense | | 1,640 | |
| | Estimated Warranty Liability | | | 1,640 |
| | To record estimated warranty liability; 2% × $82,000 = $1,640. | | | |

**b.** Entry to record the warranty expense incurred in January:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jan. 29 | Estimated Warranty Liability | | 2,000 | |
| | Merchandise Inventory | | | 2,000 |
| | To record replacement of furniture covered by warranty. | | | |

**c.** $380 (calculated as: $740 + 1,640 − 2,000).

## EXERCISE 9–5

**a.**

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Dec 31, 2023 | Salaries Expense | | 2,000 | |
| | Employment Insurance Expense | | 56 | |
| | Government Pension Expense | | 80 | |
| | Employee Income Taxes Payable | | | 500 |
| | Employment Insurance Payable | | | 96 |
| | Government Pension Payable | | | 160 |
| | Salaries Payable | | | 1,380 |
| | To record unpaid salary and benefits for J. Smith at December 31. | | | |

Calculations:

Employment Insurance Expense: $2,000 × 2% = 40 × 1.4 times = $56
Government Pension Expense: $2,000 × 4% = $80
Employment Insurance Payable: $40 + 56 = $96
Government Pension Payable: $80 + 80 = $160

**b.**

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jan 5, 2024 | Salaries Payable . . . . . | | 1,380 | |
| | Cash . . . . . | | | 1,380 |
| | To record payment of Dec 31 salary payable to J. Smith. | | | |
| Jan 5, 2024 | Employee Income Taxes Payable . . . . . | | 500 | |
| | Employment Insurance Payable . . . . . | | 96 | |
| | Government Pension Payable . . . . . | | 160 | |
| | Cash . . . . . | | | 756 |
| | To record payment of amounts owing at Dec 31 to Government of Canada for J. Smith. | | | |

---

## EXERCISE 9–6

**a.**

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Feb 15, 2023 | Corporate Income Taxes Payable . . . . . | | 500 | |
| | Cash . . . . . | | | 500 |

**b.**

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Dec 31, 2023 | Corporate Income Taxes Expense . . . . . | | 6,000 | |
| | Corporate Income Taxes Payable . . . . . | | | 6,000 |
| | ($15,000 $\times$ 40% = $6,000) | | | |

**c.**

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jan 31, 2024 | Corporate Income Taxes Payable . . . . . | | 500 | |
| | Cash . . . . . | | | 500 |
| | To record payment of 2023 corporate income taxes owing. | | | |

Calculation:

| | |
|---|---|
| 2023 expense | $ 6,000 |
| Instalments paid (11 × $500) | (5,500) |
| Owing | $ 500 |

---

**EXERCISE 9–7**

| | CASE A | CASE B | CASE C |
|---|---|---|---|
| | *A. Investors purchase the bonds at par* | *B. Investors purchase the bonds at a premium* | *C. Investors purchase the bonds at a discount* |
| a. | The corporation receives $100,000 cash for the bonds. | The corporation receives $112,000 cash for the bonds. | The corporation receives $88,000 cash for the bonds. |
| b. | The corporation pays $12,000 annual interest on the $100,000 face value of the bonds. | The corporation pays $12,000 annual interest on the $100,000 face value of the bonds. | The corporation pays $12,000 annual interest on the $100,000 face value of the bonds. |
| c. | The following journal entry records the sale of the bonds.<br>Cash . . . . . 100,000<br>Bonds Payable . . . . . 100,000 | The following journal entry records the sale of the bonds.<br>Cash . . . . . 112,000<br>Premium on Bonds . . . . . 12,000<br>Bonds Payable . . . . . 100,000 | The following journal entry records the sale of the bonds.<br>Cash . . . . . 88,000<br>Discount on Bonds . . . . . 12,000<br>Bonds Payable . . . . . 100,000 |
| d. | June 30, 2022<br>The interest payment is recorded as follows:<br>Interest Expense . . . . . 6,000<br>Cash . . . . . 6,000 | June 30, 2022<br>The interest payment is recorded as follows:<br>Interest Expense . . . . . 6,000<br>Cash . . . . . 6,000<br>Amortization is recorded as follows:<br>Premium on Bonds . . . . . 2,000<br>Interest Expense . . . . . 2,000 | June 30, 2022<br>The interest payment is recorded as follows:<br>Interest Expense . . . . . 6,000<br>Cash . . . . . 6,000<br>Amortization is recorded as follows:<br>Interest Expense . . . . . 2,000<br>Discount on Bonds . . . . . 2,000 |
| | December 31, 2022<br>The interest payment is recorded as follows:<br>Interest Expense . . . . . 6,000<br>Cash . . . . . 6,000 | December 31, 2022<br>The interest payment is recorded as follows:<br>Interest Expense . . . . . 6,000<br>Cash . . . . . 6,000<br>Amortization is recorded as follows:<br>Premium on Bonds . . . . . 2,000<br>Interest Expense . . . . . 2,000 | December 31, 2022<br>The interest payment is recorded as follows:<br>Interest Expense . . . . . 6,000<br>Cash . . . . . 6,000<br>Amortization is recorded as follows:<br>Interest Expense . . . . . 2,000<br>Discount on Bonds . . . . . 2,000 |

**EXERCISE 9–8**

**a.** i. The issuance of bonds:

Cash = \$100,000 × 94% = \$94,000

Discount = \$100,000 − \$94,000 = \$6,000

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jan 1, 2022 | Cash | | 94,000 | |
| | Discount on Bonds | | 6,000 | |
| | Bonds Payable | | | 100,000 |

ii. The interest payment:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jun 30 | Interest Expense | | 6,000 | |
| | Cash | | | 6,000 |

iii. The amortization of the discount:

Discount = \$6,000 ÷ 3 years × 6 ÷ 12 = \$1,000

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jun 30 | Interest Expense | | 1,000 | |
| | Discount on Bonds | | | 1,000 |

**b.** Interest paid in cash = \$100,000 × 12% = \$12,000

Interest expense for 2022 = Interest + amortization for the year = \$12,000 + \$2,000 = \$14,000

**c.**

Nevada Inc.
Balance Sheet
At December 31, 2022

| | |
|---|---|
| *Liabilities* | |
| *Non-current** | |
| Bonds payable (Note X) | \$100,000 |
| Discount on bonds | (4,000) |
| Carrying amount | \$ 96,000 |

Note X would disclose pertinent information of the bond indenture including details of the face value and unamortized bond discount. Just the carrying amount is shown on the balance sheet.

* If it was likely that the bonds would be called on January 1, 2023, they would be classified as current liabilities. If so, details of the redemption should be disclosed in a note to the December 31, 2022 financial statements.

**d.** Retirement of the bonds:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Dec 31, 2024 | Bonds Payable | | 100,000 | |
| | Cash | | | 100,000 |

**e.** Calling of the bonds:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jan 1, 2024 | Bonds Payable | | 100,000 | |
| | Loss on Bond Retirement | | 6,000 | |
| | Discount on Bonds | | | 4,000 |
| | Cash | | | 102,000 |
| | To record retirement of bonds. | | | |

Calculation for bonds at 102:

| | |
|---|---|
| Face value | $100,000 |
| Unamortized discount | (4,000) |
| Carrying amount | 96,000 |
| Cash paid | 102,000 |
| Loss on retirement | $ (6,000) |

---

**EXERCISE 9–9**

**a.** Prepare the journal entries to record the following transactions:

i. The issuance of the bonds:
Cash $= \$200{,}000 \times 112\% = \$224{,}000$

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jan 1, 2024 | Cash | | 224,000 | |
| | Premium on Bonds | | | 24,000 |
| | Bonds Payable | | | 200,000 |

ii. The interest payment:

Interest $= \$200{,}000 \times 12\% \times 6 \div 12 = \$12{,}000$

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jun 30 | Interest Expense | | 12,000 | |
| | Cash | | | 12,000 |

iii. The amortization of the premium:

Premium $= (\$24{,}000 \div 3 \text{ years}) \times 6 \div 12 = \$4{,}000$

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jun 30 | Premium on Bonds | | 4,000 | |
| | Interest Expense | | | 4,000 |

**b.** Interest paid in cash = $\$200{,}000 \times 12\% = \$24{,}000$

$$\begin{aligned}\text{Interest expense for 2024} &= \text{Interest} - \text{amortization for the year}\\ &= \$24{,}000 - (\$24{,}000 \div 3 \text{ years})\\ &= \$24{,}000 - \$8{,}000\\ &= \$16{,}000\end{aligned}$$

These amounts are different because the amortization of the premium, which reduces Interest Expense, does not require cash.

**c.**

Sydney Corp.
Balance Sheet
At December 31, 2024

| | |
|---|---|
| *Liabilities* | |
| *Non-current* | |
| Bonds payable | $200,000 |
| Premium on bonds | 16,000 |
| Carrying amount | $216,000 |

**d.** Calling of the bonds:

Cash paid $= \$200{,}000 \times 106\% = \$212{,}000$

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jan 1, 2027 | Bonds Payable . . . . . | | 200,000 | |
| | Premium on Bonds . . . . . | | 8,000 | |
| | Loss on Bond Retirement . . . . . | | 4,000 | |
| | Cash . . . . . | | | 212,000 |

To record retirement of bonds at 106 as follows:

| | |
|---|---|
| Face value | $200,000 |
| Unamortized premium | (8,000) |
| Carrying amount | 208,000 |
| Cash paid | 212,000 |
| Loss on retirement | $ (4,000) |

---

**EXERCISE 9–10**

**a.** The issuance of bonds:

Interest paid from last interest payment date ($100,000 × 8% × 4 ÷ 12 May 1 to Sep 1) = $2,667 (rounded)

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Sep 1, 2022 | Cash . . . . . | | 102,667 | |
| | Interest payable . . . . . | | | 2,667 |
| | Bonds payable . . . . . | | | 100,000 |

**b.** The interest payment for 2023:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Nov 1, 2023 | Interest expense . . . . . | | 1,333 | |
| | Interest payable . . . . . | | 2,667 | |
| | Cash* . . . . . | | | 4,000 |
| | * ($100,000 × 8% × 6 ÷ 12) | | | |

Accrued interest at December 31, 2023:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Dec 31 | Interest expense . . . . . | | 1,333 | |
| | Interest payable . . . . . | | | 1,333 |
| | ($100,000 × 8% × 2 ÷ 12) | | | |

**c.** Bond at Maturity:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Sep 1, 2032 | Bonds Payable . . . . . | | 100,000 | |
| | Cash . . . . . | | | 100,000 |

**d.**

Harvort Inc.
Balance Sheet
At December 31, 2023

| | |
|---|---|
| *Liabilities* | |
| *Current* | |
| Interest payable | $ 1,333 |
| *Non-current** | |
| Bonds payable (Note X) | $100,000 |

Note X would disclose pertinent information of the bond indenture including details of the face value and unamortized bond premium or discount if any. Just the carrying amount is shown on the balance sheet.

---

**EXERCISE 9–11**

**a.** Prepare the journal entries to record the following transactions:

i.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jan 1, 2026 | Cash . . . . . | | 50,000 | |
| | Loan Payable . . . . . | | | 50,000 |
| | To record loan from Second Capital Bank. | | | |

ii.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jan 1 | Equipment . . . . . | | 48,000 | |
| | Cash . . . . . | | | 48,000 |
| | To record the purchase of equipment. | | | |

**b.**

Rosedale Corp.
Loan Repayment Schedule

| | *A* | *B* | *C* | *D* | *E* |
|---|---|---|---|---|---|
| | | | *(D − B)* | | (A − C) |
| *Year ended Dec 31* | *Beginning loan balance* | (A × 6%) *Interest expense* | *Reduction of loan payable* | *Total loan payment* | *Ending loan balance* |
| 2026 | $50,000 | $3,000 | $15,705 | $18,705 | $34,295 |
| 2027 | 34,295 | 2,058 | 16,647 | 18,705 | 17,648 |
| 2028 | 17,648 | 1,057 | 17,648 | 18,705 | -0- |

**c.**

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Dec 31, 2026 | Interest Expense . . . . . | | 3,000 | |
| | Loan Payable . . . . . | | 15,705 | |
| | Cash . . . . . | | | 18,705 |
| | To record loan payment to Second Capital Bank. | | | |

**d.**

Rosedale Corp.
Balance Sheet
At December 31, 2026

*Liabilities*
*Current liabilities*
Loan payable, current portion* $16,647
*Long-term liabilities*
Loan payable, 6%, instalments payable over three years** 17,648

* Current portion is the principal amount of the liability owing for one year after the reporting date. Refer to the loan schedule above.

** ($34,295 − 16,647 current portion)

---

**EXERCISE 9–12**

**a.** discount

**b.** premium

**c.** discount

**d.** premium

**e.** premium

**f.** discount

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**EXERCISE 9–13**

Cash = \$100,000 × 94% = \$94,000

Discount = \$100,000 − \$94,000 = \$6,000

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jan. 1 | Cash | | 94,000 | |
| | Discount on Bonds | | 6,000 | |
| | Bonds Payable | | | 100,000 |

---

**EXERCISE 9–14**

Cash = \$200,000 × 112% = \$224,000

Premium = \$224,000 − \$200,000 = \$24,000

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jan. 1 | Cash | | 224,000 | |
| | Premium on Bonds | | | 24,000 |
| | Bonds Payable | | | 200,000 |

---

**EXERCISE 9–15**

**a.** (a) Entry to record receipt of loan proceeds from the bank:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jan. 1 | Cash | | 50,000 | |
| | Loan Payable | | | 50,000 |
| | To record loan from Second Capital Bank. | | | |

(b) Entry to record purchase of the equipment:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jan. 1 | Equipment | | 48,000 | |
| | Cash | | | 48,000 |
| | To record the purchase of the equipment. | | | |

**b.** The loan repayment schedule is as follows:

Rosedale Corp.
Loan Repayment Schedule

| | *A* | *B* | *C* | *D* | *E* |
|---|---|---|---|---|---|
| | | | *(D − B)* | | *(A − C)* |
| *Year Ended Dec. 31* | *Beginning Loan Balance* | *(A × 6%) Interest Expense* | *Reduction of Loan Payable* | *Total Loan Payment* | *Ending Loan Balance* |
| 2023 | $50,000 | $3,000 | $15,705 | $18,705 | $34,295 |
| 2024 | 34,295 | 2,058 | 16,647 | 18,705 | 17,648 |
| 2025 | 17,648 | 1,057* | 17,648 | 18,705 | -0- |
| | | | $50,000 | | |

* *Adjusted for rounding*

**c.** Entry to record the first loan payment:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Dec. 31 | Interest Expense | | 3,000 | |
| | Loan Payable | | 15,705 | |
| | Cash | | | 18,705 |
| | To record loan payment to Second Capital Bank. | | | |

## Chapter 10 Solutions

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**EXERCISE 10–1**

**a.** The completed schedule is as follows:

| | *12% Bonds* | *Preferred Shares* | *Common Shares* |
|---|---|---|---|
| Income before interest and income taxes | $12,000,000 | $12,000,000 | $12,000,000 |
| *Less*: Interest expense | 4,800,000[1] | -0- | -0- |
| Income before taxes | 7,200,000 | 12,000,000 | 12,000,000 |
| *Less*: Income taxes at 50% | 3,600,000 | 6,000,000 | 6,000,000 |
| Net income | 3,600,000 | 6,000,000 | 6,000,000 |
| *Less*: Preferred dividends | -0- | 4,000,000[2] | -0- |
| Net income available to common shareholders (a) | $3,600,000 | $2,000,000 | $6,000,000 |
| Number of common shares outstanding (b) | 200,000 | 200,000 | 400,000 |
| Earnings per common share (a/b) | $18 | $10 | $15 |

[1] $\$40{,}000{,}000 \times 12\% = \$4{,}800{,}000$
[2] $400{,}000 \times \$10 = \$4{,}000{,}000$

**b.** Issuing bonds is the financing option that is most advantageous to the common shareholders, all other factors being considered equal. It results in higher earnings per common share. A second advantage of issuing bonds is that it does not disrupt current shareholder control. The option to issue more shares would distribute control over a larger number of shareholders causing the control held by the present shareholders to be diluted. A third advantage of issuing bonds is that interest expense is deductible for tax purposes, while dividends are paid out of after-tax dollars. One disadvantage of issuing bonds, which may make one of the other options more advantageous, is that interest expense is fixed. Issuing bonds increases interest expense and the company must earn enough income to cover the interest expense in any given year.

---

**EXERCISE 10–2**

**a.** Entry to record the transaction:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Land . . . . . | | 50,000 | |
| | Preferred Shares . . . . . | | | 50,000 |
| | To record the purchase of a tract of land in exchange for preferred shares. | | | |

**b.** The credit part of the transaction would be classified on the balance sheet in the equity section as part of share capital. The debit part of the transaction would be recorded as an asset in the property, plant, and equipment section.

## EXERCISE 10–3

**a.** The average price received for each issued preferred share is $54 ($3,456/64).

**b.** The average price received for each issued common share is $2.10 ($1,680/800).

**c.** The total contributed capital is $5,136 ($3,456 + 1,680).

## EXERCISE 10–4

**a.** Entry to record the declaration of the dividend:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| May 25 | Dividends Declared | | 100,000 | |
| | Dividends Payable | | | 100,000 |
| | To record the declaration of the dividend. | | | |

**b.** Entry to record the payment of the dividend:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| June 26 | Dividends Payable | | 100,000 | |
| | Cash | | | 100,000 |
| | To record the payment of the dividend. | | | |

## EXERCISE 10–5

**a.** Since the preferred shareholders have cumulative shares, they must receive all dividends in arrears ***and*** the current dividend before the common shareholders receive any dividends.

Dividends received by preferred shareholders (1,000 shares × $5/share = $5,000/year dividend entitlement):

= Dividends in arrears for one year + Dividends for current year

= $5,000 + 5,000 = $10,000

Common shareholders receive the balance, or $4,000 ($14,000 − $10,000).

**b.** Preferred shareholders receive dividends before the common shareholders. Since the preferred shareholders are not cumulative shares, they receive only the current dividend or $5,000.

Common shareholders receive the balance, or $9,000 ($14,000 − $5,000).

---

**EXERCISE 10–6**

**a.** The $15,000 of dividends in arrears at December 31, 2023 does not appear as a liability. Although the dividends pertain to cumulative shares, no liability exists until the board of directors declares a dividend. However, disclosure of dividends in arrears would be made in a note to the financial statements.

**b.** The company may have sufficient retained earnings but may not have sufficient cash to pay the dividends, taking into consideration other needs of the company.

**c.** The amount available for dividends to the common shareholders is calculated as follows:

| | |
|---|---|
| Amount available for all dividends (1/2 × $35,000) | $17,500 |
| Priority given to cumulative preferred shareholders | |
| Arrears to December, 2023 | (15,000) |
| Preferred dividends for 2024 | (5,000) |
| Deficiency | $(2,500) |

The $2,500 deficiency in 2024 preferred dividends has to be paid in the future before any dividends are paid to common shareholders. There will be no dividends available for common shareholders at December 31, 2024 based on the projections.

---

**EXERCISE 10–7**

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Apr. 1 | Share Dividend Declared . . . . . | | 15,000 | |
| | Common Share Dividend To Be Distributed . . . . . | | | 15,000 |
| | To record the declaration of the share dividend. (10,000 shares × 10% = 1,000 shares × $15) | | | |

**OR**

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Retained Earnings . . . . . | | 15,000 | |
| | Common Share Dividend To Be Distributed . . . . . | | | 15,000 |
| | To record the declaration of the share dividend. (10,000 shares × 10% = 1,000 shares × $15) | | | |

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Apr. 15 | Common Share Dividend To Be Distributed | | 15,000 | |
| | Common Shares . . . . . | | | 15,000 |
| | To record the distribution of the dividend. | | | |
| Jun. 1 | Cash Dividends Declared . . . . . | | 22,000 | |
| | Dividends Payable . . . . . | | | 22,000 |
| | To record the declaration of the cash dividend. [(10,000 shares + 1,000 shares) × $2] | | | |

**OR**

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Retained Earnings . . . . . | | 22,000 | |
| | Dividends Payable . . . . . | | | 22,000 |
| | To record the declaration of the cash dividend. [(10,000 shares + 1,000 shares) × $2] | | | |

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jun. 30 | Dividends Payable . . . . . | | 22,000 | |
| | Cash . . . . . | | | 22,000 |
| | To record payment of the cash dividend. | | | |
| Dec. 31 | Retained Earnings . . . . . | | 37,000 | |
| | Share Dividend Declared . . . . . | | | 15,000 |
| | Cash Dividend Declared . . . . . | | | 22,000 |
| | To close the Dividends Declared general ledger account to the Retained Earnings account. | | | |

**OR**

If Retained Earnings was debited on April 1 (instead of Share Dividends Declared) and June 1 (instead of Cash Dividends Declared), then no closing entry is required on December 31.

## EXERCISE 10–8

**a.** i. Book value per preferred share = ($300 + 30)/300 shares = $1.10 per share

ii. Book value per common share = ($992 − 330)/20 shares = $33.10 per share

**b.** Book value per common share after split = $662/40 shares = $16.55 per share

## EXERCISE 10–9

**a.** No journal entry.

Authorization of share issue:

Memorandum

The company is authorized under the [name of legislation] to issue an unlimited number of common shares and 10,000, 4% preferred shares.

**b.** Issue of 10,000 common shares:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jan 2, 2023 | Intangible Assets | | 10,000 | |
| | Common Shares | | | 10,000 |

**c.** Issue of 1,000 preferred shares:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jan 2, 2023 | Cash | | 3,000 | |
| | Preferred Shares | | | 3,000 |

## EXERCISE 10–10

Common share dividend to be issued = (5,000 shares × 10%) × $10 = $5,000

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jan 15, 2023 | Retained Earnings | | 5,000 | |
| | Common Share Dividend to be Issued | | | 5,000 |
| Feb 15, 2023 | Common Share Dividend to be Issued | | 5,000 | |
| | Common Shares | | | 5,000 |

## EXERCISE 10–11

**a.**

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jan 5, 2023 | Cash | | 150 | |
| | Common Shares | | | 150 |
| | To record issue of 10 common shares for cash. | | | |
| Jan 12 | Land | | 50 | |
| | Buildings | | 100 | |
| | Machinery | | 100 | |
| | Common Shares | | | 250 |
| | To record issue of 50 common shares in exchange for assets. | | | |
| Feb 28 | Share Dividend Declared | | 42 | |
| | Common Share Dividend to be Issued | | | 42 |
| | To record the share dividend: $[(10+50) \times 10\% = 6$ shares $\times$ \$7] (An entry to record net income to date could be made, but is not necessary.) | | | |
| Mar 15 | Common Share Dividend to be Issued | | 42 | |
| | Common Shares | | | 42 |
| | To record issue of dividend on common shares. | | | |
| Dec 31 | Income Summary | | 200 | |
| | Retained Earnings | | | 200 |
| | To close the income summary account. | | | |
| Dec 31 | Cash Dividend Declared | | 66 | |
| | Dividends Payable | | | 66 |
| | To record the cash dividend declared: $[(10 + 50 + 6) \times$ \$1] | | | |
| Dec 31 | Retained Earnings | | 108 | |
| | Share Dividend Declared | | | 42 |
| | Cash Dividend Declared | | | 66 |
| | To close 2023 dividends to retained earnings. | | | |

**b.** i.

Blitz Power Tongs Inc.
Partial Statement of Financial Position
At January 31, 2023

*Shareholders' Equity*

| | |
|---|---|
| Common shares, stated value $6.67 per share | |
| Authorized–unlimited shares | |
| Issued and outstanding–60 shares | $400 |

ii.

Blitz Power Tongs Inc.
Partial Statement of Financial Position
At February 28, 2023

*Shareholders' Equity*

| | | |
|---|---|---|
| Common shares, stated value $6.70 per share | | |
| Authorized—unlimited shares | | |
| Issued and outstanding – 60 shares | $400 | |
| Common share dividend to be issued – 6 shares | 42 | $442 |
| Retained earnings* | | 18 |
| Total shareholders' equity | | $460 |

* ($60 net income − 42 dividends declared)

Blitz Power Tongs Inc.
Partial Statement of Financial Position
At December 31, 2023

*Shareholders' Equity*

| | |
|---|---|
| Common shares, stated value $7.37 per share | |
| Authorized – unlimited shares | |
| Issued and outstanding – 60 shares | $442 |
| Retained earnings* | 92 |
| Total shareholders' equity | $534 |

iii. * ($200 net income − 66 dividends declared − 42 dividends declared)

**EXERCISE 10–12**

**a.**

| | *10% bonds* | | *Preferred shares* | | *Common shares* |
|---|---|---|---|---|---|
| Income before interest and income taxes | $750,000 | | $750,000 | | $750,000 |
| *Less:* Interest expense | 150,000 | * | -0- | | -0- |
| Income before income taxes | 900,000 | | 750,000 | | 750,000 |
| *Less:* Income taxes at 30% | 270,000 | | 225,000 | | 225,000 |
| | 630,000 | | 525,000 | | 525,000 |
| *Less:* Preferred dividends | -0- | | 160,000 | ** | -0- |
| Net Available to common shareholders | $630,000 | | $365,000 | | $250,000 |
| Number of common shares outstanding | 20,000 | | 20,000 | | 50,000 |
| Earnings per common share | $ 31.50 | | $ 18.25 | | $ 5.00 |

* $1,500,000 x 10% = $150,000
** 15,000 x $10 = $160,000

**b.** From a common shareholders perspective, issuing bonds is the best option, since it maximizes net income (net income is available as potential dividends) and their earnings per share ratio.

**EXERCISE 10–13**

**a.**

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Feb 20 | Cash Dividends Declared . . . . . | | 50,000 | |
| | Dividends Payable – Preferred Shares . | | | 50,000 |
| | (100,000 × $0.50) | | | |
| Mar 1 | Dividends Payable – Preferred Shares . . . . | | 50,000 | |
| | Cash . . . . . | | | 50,000 |
| Apr 15 | Cash Dividends Declared . . . . . | | 750,000 | |
| | Dividends Payable – Common Shares . | | | 750,000 |
| | (1,250,000 × $0.60) | | | |
| Jun 10 | Dividends Payable – Common Shares . . . . | | 750,000 | |
| | Cash . . . . . | | | 750,000 |
| Aug 1 | Cash . . . . . | | 250,000 | |
| | Common Shares . . . . . | | | 250,000 |
| Dec 31 | Cash Dividends – preferred shares[1] . . . . . | | 50,000 | |
| | Cash dividends – common shares . . . . . | | 375,000 | |
| | Cash . . . . . | | | 425,000 |
| | ($425,000 − $50,000 preferred dividends*) = $375,000 to common shareholders | | | |

* Remaining cumulative dividends on preferred shares not yet declared for the current fiscal year; 100,000 shares $\times$ ($1.00 − $.50 declared Feb 20) = $50,000 to be allocated to preferred class before any allocation to common shareholders.

**b.**

[1] No preferred share dividends were declared on Dec. 15, but these are cumulative and only 50% was paid in the current fiscal year.

Belfast Steel Ltd.
Statement of Changes in Equity
For the Year Ended December 31, 2023
('000s)

| | *Common shares* | *Preferred shares* | *Retained Earnings* | *Total equity* |
|---|---|---|---|---|
| Balance at Jan 1, 2023 | $ 25,000 | $ 1,000 | $ 4,000 | $30,000 |
| Common shares Issued | 250 | | | 250 |
| Net income | | | 500 | 500 |
| Dividends | | | | |
| Preferred | | | (100)* | (100) |
| Common | | | (1,125)** | (1,125) |
| Balance at Dec 31, 2023 | $ 25,250 | $ 1,000 | $ 3,275 | $29,525 |

| | |
|---|---|
| * Feb 20 dividends | $ 50,000 |
| Dec 31 cumulative dividends allocated | 50,000 |
| Total | $ 100,000 |
| | |
| ** Apr 15 dividends | $ 750,000 |
| Dec 31 dividends | 375,000 |
| Total | $1,125,000 |

---

**EXERCISE 10–14**

**a.**

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jan 15 | Organization Expenses | | 15,000 | |
| | Common Shares | | | 15,000 |
| | Issued common shares to promoters. | | | |
| Feb 20 | Cash | | 90,000 | |
| | Common Shares | | | 90,000 |
| | Issued common shares for cash: 15,000 shares × $6/share | | | |
| Mar 7 | Cash | | 90,000 | |
| | Preferred Shares | | | 90,000 |
| | Issued preferred shares for cash. | | | |
| Apr 9 | Land | | 300,000 | |
| | Building | | 120,000 | |
| | Common Shares | | | 420,000 |
| | Issued common shares in exchange for land and building. | | | |
| May 1 | Cash | | 63,000 | |
| | Preferred Shares | | | 63,000 |
| | Issued preferred shares: 3,500 × 18 | | | |
| May 15 | Cash dividends* – preferred (4,500 + 3,500 × $2) | | 16,000 | |
| | Cash dividends* – common ($50,000 − 16,000) | | 34,000 | |
| | Cash | | | 50,000 |
| Jun 5 | Cash | | 112,000 | |
| | Common Shares | | | 112,000 |
| | Issued common shares. | | | |
| Jul 15 | Cash | | 185,000 | |
| | Preferred Shares | | | 35,000 |
| | Common Shares | | | 150,000 |
| | Issued preferred and common shares: 2,000 × 17.50 = 132,000; 20,000 × 7.50 = 150,000 | | | |
| Dec 31 | Retained Earnings | | 25,000 | |
| | Income Summary | | | 25,000 |
| | Closed the net loss to Retained Earnings. | | | |
| Dec 31 | Retained Earnings | | 50,000 | |
| | Cash dividends | | | 50,000 |
| | Closed the temporary dividends account to Retained Earnings. | | | |

* Debit dividends directly to retained earnings is also acceptable.

**b.**

Bray Co.
Equity Section of the Balance Sheet
December 31, 2023

| | |
|---|---|
| Contributed Capital: | |
| Preferred Shares, $2.00; 10,000 shares authorized; | |
| 10,000 shares issued and outstanding | $ 188,000* |
| Common Shares | |
| unlimited shares authorized; | |
| 114,000 shares issued and outstanding | 787,000** |
| Total contributed capital | $ 471,000 |
| Deficit*** | 75,000 |
| Total equity | $ 396,000 |

Calculations:

| * Preferred Shares: | | Shares | Dollars |
|---|---|---|---|
| Mar 7 | Issued 4,500 shares | 4,500 | $ 90,000 |
| May 1 | Issued 3,500 shares | 3,500 | 63,000 |
| Jul 15 | Issued 2,000 shares | 2,000 | 35,000 |
| | Totals | 10,000 | $188,000 |
| ** Common Shares: | | | |
| Jan 15 | Issued 3,000 shares | 3,000 | $ 15,000 |
| Feb 20 | Issued 15,000 shares | 15,000 | 90,000 |
| Apr 9 | Issued 60,000 shares | 60,000 | 420,000 |
| Jun 5 | Issued 16,000 shares | 16,000 | 112,000 |
| Jul 15 | Issued 20,000 shares | 20,000 | 150,000 |
| | Totals | 114,000 | $787,000 |

*** Retained earnings/(deficit): $25,000 deficit − dividends declared $50,000 = $75,000 deficit balance

---

**EXERCISE 10–15**

**a.**

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jan 4 | Cash | | 165,000 | |
| | Common shares | | | 165,000 |
| | Issued 15,000 common shares at $11. | | | |
| Jan 8 | Cash Dividends or Retained Earnings | | 57,500 | |
| | Preferred Dividend Payable | | | 45,000 |
| | Common Dividend Payable | | | 12,500 |
| | Declared dividend on preferred shares: (10,000 × $1.50 × 3 years) and common shares (57,500 − 45,000) | | | |
| Jan 31 | Preferred Dividend Payable | | 45,000 | |
| | Common Dividend Payable | | 12,500 | |
| | Cash | | | 57,500 |
| | Paid cash dividends. | | | |
| Jul 1 | Cash | | 77,500 | |
| | Preferred Shares | | | 77,500 |
| | Issued preferred shares. | | | |
| Aug 7 | Cash Dividends or Retained Earnings | | 40,000 | |
| | Common Dividend Payable | | | 40,000 |
| | Declared dividend on common shares: ($1.00 × 40,000) | | | |
| Aug 31 | Common Dividend Payable | | 40,000 | |
| | Cash | | | 40,000 |
| | Paid cash dividends declared. | | | |

**b.**

Carman Corp.
Statement of Changes in Equity
For Year Ended December 31, 2023

| | Preferred Shares | Common Shares | Retained Earnings | Total Equity |
|---|---|---|---|---|
| Balance, January 1 | $150,000 | $250,000 | $250,000 | $650,000 |
| Issuance of shares | 77,500 | 165,000 | | 242,500 |
| Net income (loss)** | | | (50,000) | (50,000) |
| Dividends* | | | (97,500) | (97,500) |
| Balance, December 31 | $227,500 | $415,000 | $102,500 | $745,000 |

* ($57,500 + 40,000)

** ($102,500 − 250,000 + 97,500) = (50,000) loss

**c.**

Carman Corp.
Equity Section of the Balance Sheet
December 31, 2023

| | |
|---|---|
| Contributed Capital: | |
| Preferred shares, $1.50 cumulative, unlimited shares authorized, | |
| 15,000 shares issued and outstanding | $227,500 |
| Common shares, unlimited shares authorized | |
| 40,000 shares issued and outstanding | 415,000 |
| Total contributed capital | $642,500 |
| Retained earnings | 102,500 |
| Total equity | $745,000 |

Calculations:

| Preferred Shares: | | Shares | Dollars |
|---|---|---|---|
| Jan 1 | Opening balance | 10,000 | $150,000 |
| Jul 1 | Issued 5,000 shares ($77,500 ÷ $15.50) | 5,000 | 77,500 |
| | Totals | 15,000 | $227,500 |
| Common Shares: | | | |
| Jan 1 | Opening balance | 25,000 | $250,000 |
| Jan 4 | Issued 15,000 shares | 15,000 | $165,000 |
| | Totals | 40,000 | $415,000 |

**d.**

2022:

$$\begin{aligned}\text{Book value per preferred share} &= \frac{\text{Paid-in capital for preferred shares} + \text{dividends in arrears}}{\text{Number of preferred shares outstanding}} \\ &= \frac{\$150{,}000 + 30{,}000^*}{10{,}000} \\ &= \$18{,}00 \text{ per share}\end{aligned}$$

* ($1.50 × 10,000 shares × 2 years)

2023:

$$\text{Book value per preferred share} = \frac{\$227{,}500 + 0}{15{,}000} = \$15.17$$

2022:

$$\begin{aligned}\text{Book value per common share} &= \frac{\text{Total equity minus preferred shares paid-in capital} + \text{dividends in arrears}}{\text{Number of common shares outstanding}} \\ &= \frac{\$650{,}000 - 180{,}000}{25{,}000} \\ &= \$18{,}80 \text{ per share}\end{aligned}$$

2023:

$$\text{Book value per common share} = \frac{\$745{,}000 - 227{,}500}{40{,}000} = \$12.94$$

## Chapter 11 Solutions

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**EXERCISE 11–1**

| | |
|---|---|
| F | A payment of $5,000 was made on a bank loan. |
| O | Depreciation expense for equipment was $1,000. |
| F | $10,000 of share capital was issued for cash. |
| F | Cash dividends of $2,500 were declared and paid to shareholders. |
| NC | Bonds were issued in exchange for equipment costing $7,000. |
| I | Land was purchased for $25,000 cash. |
| O | $750 of accrued salaries was paid. |
| O | $10,000 of accounts receivable was collected. |
| NC & I | A building was purchased for $80,000: $30,000 was paid in cash and the rest was borrowed. |
| I | A long-term investment in shares of another company was sold for $50,000 cash. |
| O & I | Equipment was sold for $6,000. The related accumulation depreciation was $3,000 with an original cost of $10,000. |
| O | $1,200 was paid for a 12-month insurance policy in effect next year. |
| O | A patent was amortized for $500. |
| F | Bonds were issued for $50,000 cash. |

---

**EXERCISE 11–2**

**a.** The reconstructed entry to record the sale of the machinery:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Accumulated Depreciation . . . . . | | ? | |
| | Cash . . . . . | | ? | |
| | Loss on Sale of Machinery (given) . . . . . | | 3 | |
| | Machinery (given) . . . . . | | | 20 |

Accumulated Depreciation

| | | | |
|---|---|---|---|
| | | 42 | Dec. 31, 2022 bal. |
| Debit regarding sale | ? = 12 | 25 | Dep. Expense, 2023 |
| | | 55 | Dec. 31, 2023 bal. |

Therefore, the debit to cash in the journal entry must be 5 (20-12-3).

**b.** The reconstructed entry to record the purchase of machinery:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Machinery . . . . . | | ? | |
| | Cash . . . . . | | | ? |

Machinery

| | | | |
|---|---|---|---|
| Dec. 31, 2022 bal. | 138 | | |
| Debit regarding purch. | ? = 7 | 20 | Credit regarding sale |
| Dec. 31, 2023 bal. | 125 | | |

Therefore, the debit to Machinery and credit to Cash in the entry must be 7 (138-20-125).

**c.** The reconstructed entry to record the declaration of dividends:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Dividends or Retained Earnings . . . . . | | ? | |
| | Dividends Payable . . . . . | | | ? |

Retained Earnings

| | | | |
|---|---|---|---|
| | | 81 | Dec. 31, 2022 bal. |
| 2023 Net loss | 2 | | |
| 2023 Div. Declared | ? = 35 | | |
| | | 44 | Dec. 31, 2023 bal. |

Therefore, the debit to Dividends or Retained Earnings is 35 and credit to Dividends Payable 35 (81-2-44).

**d.** The reconstructed entry to record the payment of dividends:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Dividends Payable . . . . . | | ? | |
| | Cash . . . . . | | | ? |

| Dividends Payable | | | |
|---|---|---|---|
| | | 5 | Dec. 31, 2022 bal. |
| Div. Paid 2023 | ? = 39 | 35 | Div. Declared 2023 |
| | | 1 | Dec. 31, 2023 bal. |

Therefore, the debit to Dividends Payable is 39 and the credit to Cash 39 (5+35-1).

Calculations:

| | *Balance ($000s)* | | *Change* | | *Explanation of Change* |
|---|---|---|---|---|---|
| *Account* | *2023 Dr. (Cr.)* | *2022 Dr. (Cr.)* | *Dr.* | *Cr.* | |
| Cash | 40 | 22 | 18 | | |
| Accounts receivable | 34 | 39 | | 5 | Decrease in accounts receivable |
| Merchandise inventory | 150 | 146 | 4 | | Increase in merchandise inventory |
| Prepaid expenses | 3 | 2 | 1 | | Increase in prepaids |
| Machinery | 125 | 138 | 7 | 20 | Purchase in machinery for cash of 7; Sold machinery for cash of 5; Loss on sale 3 |
| Accumulated dep. | -55 | -42 | 12 | 25 | Depreciation expense 25 |
| Accounts payable | -29 | -31 | 2 | | Decrease in accounts payable |
| Dividends payable | -1 | -5 | 39 | 35 | Paid dividends of 39 |
| Bonds payable | -15 | -38 | 23 | | Paid bonds 23 |
| Common shares | -208 | -150 | | 58 | Issued common shares 58 |
| | | | 2 | | Net loss 2 |
| Retained earnings | -44 | -81 | 35 | | |
| Total | | | 125 | 143 | |
| Change in cash | | | 18 | | Net increase in cash of 18 |

**e.** The statement of cash flows is as follows:

Larriet Inc.
Statement of Cash Flows
Year Ended December 31, 2023

| | | |
|---|---|---|
| *Cash flows from operating activities:* | | |
| Net loss | $(2) | |
| Adjustments to reconcile net loss to cash provided by operating activities: | | |
| Decrease in accounts receivable | 5 | |
| Increase in merchandise inventory | (4) | |
| Increase in prepaids | (1) | |
| Decrease in accounts payable | (2) | |
| Depreciation expense | 25 | |
| Loss on sale of machinery | 3 | |
| Net cash inflow from operating activities | | $24 |
| *Cash flows from investing activities:* | | |
| Purchase of machinery | $(7) | |
| Sale of machinery | 5 | |
| Net cash outflow from investing activities | | (2) |
| *Cash flows from financing activities:* | | |
| Issued common shares | $58 | |
| Paid bonds | (23) | |
| Paid dividends | (39) | |
| Net cash outflow from financing activities | | (4) |
| Net increase in cash | | $18 |
| Cash at beginning of year | | 22 |
| Cash at end of year | | $40 |

---

**EXERCISE 11–3**

**a.**

Glacier Corporation
Statement of Cash Flows
For the Year Ended December 31, 2023

| | | |
|---|---|---|
| *Operating activities* | | |
| Net income | | $ 14 |
| Items not affecting cash flow | | |
| Depreciation expense | | 6 |
| Gain on sale of equipment (note 2) | | (1) |
| Loss on sale of land (note 1) | | 4 |
| Net changes in non-cash working capital: | | |
| Accounts receivable, inventory and accounts payable ($4 − 8 − 4) | | (8) |
| Cash flow from operating activities | | 15 |
| *Investing activities* | | |
| Proceeds from sale of equipment (note 2) | $ 6 | |
| Proceeds from sale of land | 10 | |
| Purchase of property, plant, and equipment | (41) | |
| Cash flow used by investing activities | | (25) |
| *Financing activities* | | |
| Proceeds from borrowings | 8 | |
| Common shares issued | 10 | |
| Payment of dividends | (6) | |
| Cash flow from financing activities | | 12 |
| Net increase in cash | | 2 |
| Cash at beginning of year | | 8 |
| Cash at end of year | | $ 10 |

Note 1: The journal entry to record the sale of the land would be:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Cash | | 10 | |
| | Loss on Disposal | | 4 | |
| | Land | | | 14 |

Note 2:

| | |
|---|---|
| Cost of equipment sold (given) | $ 7 |
| Accumulated depreciation (derived) | (2) |
| Carrying amount (given) | 5 |
| Cash proceeds (derived) | **(6)** |
| Gain on sale (per income statement) | $ 1 |

**b.** Cash flow from operating activities is almost identical to net income ($15 vs $14). The company appears to be embarking on a re-capitalization project, selling equipment and investing

in new property, plant, and equipment. Most of this ($8 + 10) has been financed by issuing debt and common shares. Opening and ending cash balances are almost identical ($8 vs $10).

---

**EXERCISE 11–4**

**a.**

Lelei Ltd.
Statement of Cash Flows
For the Year Ended December 31, 2023
($000s)

| | | |
|---|---|---|
| *Operating activities* | | |
| Income from operations(225 − 44 − 100 − 28 − 10 + 15) | | $ 58 |
| Items not affecting cash flow | | |
| Depreciation expense | 44 | |
| Gain on sale of patent | (15) | |
| Net changes in non-cash working capital: | | |
| Increase in accounts receivable | (100) | |
| Increase in inventory | (60) | |
| Increase in prepaid rent | (10) | |
| Increase in accounts payable | 50 | |
| Increase in income taxes payable | 8 | (83) |
| Cash flow used by operating activities | | (25) |
| *Investing activities* | | |
| Proceeds from sale of patent | $ 45 | |
| Purchase of equipment | (120) | |
| Purchase of patent | (30) | |
| Cash flow used by investing activities | | (105) |
| *Financing activities* | | |
| Proceeds from non-current borrowings | 100 | |
| Common shares issued (140 − 40 non-cash) | 100 | |
| Repayment of non-current borrowings (100 − 80) | (20) | |
| Dividends (20 − 10 dividend payable) | (10) | |
| Cash flow from financing activities | | 170 |
| Net increase in cash | | 40 |
| Cash at beginning of year | | -0- |
| Cash at end of year | | $ 40 |

**b.** The statement of cash flows shows that the company used debt and equity to finance its operations, purchase equipment, and pay dividends. The company generated more cash

than it used ($40), from solely its financing activities. The cash flow used by operating activities ($25) is a concern, but on the other hand, this may be acceptable in the first year of operations.

---

**EXERCISE 11–5**

**a.**

ZZ Corp.
Statement of Cash Flows
For the Year Ended December 31, 2023

| | | |
|---|---|---|
| *Operating activities* | | |
| Income from operations | | $ 40,000 |
| Items not affecting cash flow: | | |
| Depreciation expense | 27,000 | |
| Loss on sale of equipment | 11,000 | |
| Gain on sale of land | (4,000) | |
| Net changes in non-cash working capital: | | |
| Income taxes paid | (4,000) | |
| Increase in accounts receivable | (10,000) | |
| Decrease in inventory | 4,000 | |
| Decrease in prepaid expenses | 2,000 | |
| Decrease in accounts payable | (2,000) | 24,000 |
| Cash flow used by operating activities | | 64,000 |
| *Investing activities* | | |
| Proceeds from sale of land | $ 26,000 | |
| Proceeds from sale of equipment | 15,000 | |
| Building addition | (60,000) | |
| Purchase of equipment | (15,000) | |
| Cash flow used by investing activities | | (34,000) |
| *Financing activities* | | |
| Payment of dividends | (20,000) | |
| Cash flow from financing activities | | (20,000) |
| Net increase in cash | | 10,000 |
| Cash at beginning of year | | 30,000 |
| Cash at end of year | | $ 40,000 |

**b.** ZZ Corp. has generated cash inflow of $64,000 from operating activities, which is good. The company is advised to watch its management of accounts receivable as it has increased from $30,000 to $40,000 or 33% in one year. Management needs to ensure that it is collecting

the accounts receivable as efficiently as possible. In terms of investing activities, it has sold land and equipment, but overall there has been a cash outflow of $34,000 because of the purchase of new equipment and the building addition. The company was able to pay its shareholders dividends of $20,000. Overall, the company added $10,000 more cash to its cash balance at the end of the year.

---

**EXERCISE 11–6**

**a.**

Egglestone Vibe Inc.
Statement of Cash Flows
For the Year Ended December 31, 2023

| | | |
|---|---|---|
| Cash flows from operating activities | | |
| Net income | | $ 24,700 |
| Items not affecting cash flow: | | |
| Depreciation expense | $ 55,900 | |
| Loss on sale of equipment (Note 1) | 10,100 | |
| Gain on sale of land (Note 2) | (38,200) | |
| Impairment loss – goodwill | 63,700 | |
| Net changes in non-cash working capital: | | |
| Increase in accounts receivable | (36,400) | |
| Increase in inventory | (67,600) | |
| Decrease in accounts payable | (28,200) | (40,700) |
| Net cash used by operating activities | | (16,000) |
| Cash flows from investing activities | | |
| Proceeds from sale of equipment | 27,300 | |
| Purchase of land | (62,400) | |
| Proceeds from sale of land | 150,000 | |
| Net cash provided by investing activities | | 114,900 |
| Cash flows used by financing activities | | |
| Payment of cash dividends (Note 3) | (89,900) | |
| Issuance of notes payable | 10,500 | |
| Net cash used by financing activities | | (79,400) |
| Net increase in cash | | 19,500 |
| Cash at beginning of year | | 146,900 |
| Cash at end of year | | $166,400 |

Notes:

1. $\$27{,}300 - (\$53{,}000 - \$15{,}600)$
2. $\$150{,}000 - \$111{,}800$
3. $\$430{,}000 + 24{,}700$ net income $- 386{,}900 = 67{,}800$ dividends declared
   $\$41{,}600 + 67{,}800 - 19{,}500 = \$89{,}900$

**b.** Negative cash flows from operating activities may signal trouble ahead with regard to Egglestone's daily operations. Current assets such as accounts receivable, inventory, and accounts payable all increased the cash outflows over the year. The only positive cash flows was from the investing activities. Specifically, proceeds from the sale of equipment and land were used to fund operating and pay dividends. This may be cause for concern if the assets sold were actually still being used to earn revenues and generate net income. Shareholders did receive cash dividends, but was that appropriate, given the net cash outflows from operations? All this increases the pressure on the company to find ways to improve its profitability as well as its management of receivables, payables, and inventory.

---

**EXERCISE 11–7**

Neuton Ltd.
Statement of Cash Flows
For Year Ended June 30, 2023

| | | |
|---|---|---|
| Cash flows from operating activities: | | |
| Net income | $ 44,380 | |
| Items not affecting cash flow: | | |
| Depreciation expense | 58,600 | |
| Net changes in non-cash working capital: | | |
| Increase in accounts receivable | (18,000) | |
| Decrease in merchandise inventory | 30,000 | |
| Increase in prepaid expenses | (200) | |
| Decrease in accounts payable | (26,000) | |
| Decrease in wages payable | (9,000) | |
| Decrease in income taxes payable | (1,200) | |
| Gain on sale of equipment | (2,000) | |
| Net cash inflow from operating activities | | $ 76,580 |
| Cash flows from investing activities: | | |
| Cash received from sale of old equipment (Note 1) | $ 10,000 | |
| Cash paid for new equipment | (58,600) | |
| Net cash outflow from investing activities | | (48,600) |
| Cash flows from financing activities: | | |
| Cash received from issuance of common shares | $ 50,000 | |
| Cash paid to retire notes payable | (30,000) | |
| Cash paid for dividends (Note 2) | (27,180) | |
| Net cash outflow from financing activities | | (7,180) |
| Net increase in cash | | $ 20,800 |
| Cash balance at beginning of year | | 35,000 |
| Cash balance at end of year | | $ 55,800 |

Note 1:

| | |
|---|---|
| Cash Proceeds from Sale of Equipment: | |
| Cost of equipment sold | $ 48,600 |
| Accumulated depreciation of equipment sold (see below) | (40,600) |
| Book value of equipment sold | 8,000 |
| Gain on sale of equipment | 2,000 |
| Cash receipt from sale of equipment | $ 10,000 |

| Equipment | | | |
|---|---|---|---|
| Bal 30/6/22 | 120,000 | | |
| Purchase | 58,600 | 48,600 | Sale |
| Bal 30/6/23 | 130,000 | | |

| Accum. Depreciation, Equipment | | | |
|---|---|---|---|
| | | 10,000 | Bal 30/6/22 |
| Sale | 40,600 | 58,600 | Deprec. Exp |
| | | 28,000 | Bal 30/6/23 |

Note 2: Opening retained earnings + net income – dividends declared = Closing retained earnings
$\$7{,}400 + 44{,}380 - \text{dividends} = 24{,}600$
$\text{Dividends} = 24{,}600 - 7{,}400 - 44{,}380 = 27{,}180$

---

**EXERCISE 11–8**

Yucotin Corp.
Statement of Cash Flows
For Year Ended December 31, 2023

| | | |
|---|---|---|
| Cash flows from operating activities: | | |
| Net income | $ 134,000 | |
| Items not affecting cash flow: | | |
| Depreciation | 36,000 | |
| Net changes in non-cash working capital: | | |
| Increase in accounts receivable | (8,000) | |
| Increase in inventory | (145,000) | |
| Decrease in accounts payable | (18,000) | |
| Increase in income taxes payable | 2,000 | |
| Net cash inflow from operating activities | | $ 1,000 |
| Cash flows from investing activities: | | |
| Equipment purchase | | (24,000) |
| Cash flows from financing activities: | | |
| Common shares issued | $ 40,000 | |
| Dividends | (37,000) | |
| Net cash outflow from financing activities | | (3,000) |
| Net increase in cash | | $(20,000) |
| Cash, beginning balance | | 268,000 |
| Cash, ending balance | | $248,000 |

---

**EXERCISE 11–9**

**a.** Opening retained earnings + net income – dividends declared = closing retained earnings
$\text{Dividends declared} = 115{,}200 - 68{,}800 - 86{,}400 = \$40{,}000$

Cash dividends paid = opening dividends payable + dividends declared − closing dividends payable
Cash dividends paid = 500 + 40,000 − 1,000 = $39,500

**b.**

Tubric Corp.
Statement of Cash Flows
For Year Ended December 31, 2023

| | | |
|---|---|---|
| Cash flows from operating activities: | | |
| Net income | $ 86,400 | |
| Items not affecting cash flow: | | |
| Depreciation expense | 34,400 | |
| Loss on sale of equipment | 3,200 | |
| Gain on sale of long-term investment | (9,600) | |
| Net changes in non-cash working capital: | | |
| Increase in accounts receivable | (42,400) | |
| Increase in inventory | (25,600) | |
| Decrease in accounts payable | (14,900) | |
| Net cash inflow from operating activities | | $ 31,500 |
| Cash flows from investing activities: | | |
| Proceeds from sale of long-term investment | $ 24,000 | |
| Proceeds from sale of equipment | 5,600 | |
| Purchase of equipment | (16,000) | |
| Net cash inflow from investing activities | | 13,600 |
| Cash flows from financing activities: | | |
| Issuance of bonds payable | $ 20,000 | |
| Payment of dividend (from part a above) | (39,500) | |
| Net cash outflow from financing activities | | (19,500) |
| Net increase in cash and cash equivalents | | $ 25,600 |
| Cash and cash equivalents, January 1, 2023 | | 28,800 |
| Cash and cash equivalents, December 31, 2023 | | $ 54,400 |

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**EXERCISE 11–10**

**a.**

Rorrow Ltd.
Balance Sheet
as at December 31, 2023

| | 2023 | 2022 | Total W/C accounts except Cash* | | Net Change |
|---|---|---|---|---|---|
| Current assets | | | | | |
| Cash | $ 152,975 | $ 86,000 | | | |
| Accounts receivable (net) | 321,640 | 239,080 | | | |
| Inventory | 801,410 | 855,700 | 1,160,890 | 1,124,880 | (36,010) |
| Prepaid insurance expenses | 37,840 | 30,100 | | | |
| Equipment | 2,564,950 | 2,156,450 | | | |
| Accumulated depreciation, equipment | (625,220) | (524,600) | | | |
| Total assets | $3,253,595 | $2,842,730 | | | |
| Current liabilities | | | | | |
| Accounts payable | $ 478,900 | $ 494,500 | | | |
| Salaries and wages payable | 312,300 | 309,600 | 897,410 | 901,280 | (3,870) |
| Accrued interest payable | 106,210 | 97,180 | | | |
| Bonds payable, due July 31, 2031 | 322,500 | 430,000 | | | |
| Common shares | 1,509,300 | 1,204,000 | | | |
| Retained earnings | 524,385 | 307,450 | | | |
| Total liabilities and shareholders' equity | $3,253,595 | 2,842,730 | | Net change | (39,880) |

* exclude current portion of long-term debt as this account is not a working capital account

Rorrow Ltd.
Income Statement
For the year ended December 31, 2023

| | |
|---|---|
| Sales | $ 5,258,246 |
| Expenses | |
| Cost of goods sold | 3,150,180 |
| Salaries and benefits expense | 754,186 |
| Depreciation expense | 100,620 |
| Interest expense | 258,129 |
| Insurance expense | 95,976 |
| Income tax expense | 253,098 |
| | 4,612,189 |
| Net income | $ 646,057 |

Rorrow Ltd.
SCF – Direct Method Worksheet

| | I/S Accounts | Changes to Working Capital Accounts | Net Cash Flow In (Out) |
|---|---|---|---|
| Cash received from sales | $ 5,258,246 | $ (82,560) | $ 5,175,686 |
| Cash paid for goods and services | (3,150,180) | 54,290 | |
| | (95,976) | (7,740) | |
| | | (15,600) | (3,215,206) |
| Cash paid to or on behalf of employees | (754,186) | 2,700 | (751,486) |
| Cash paid for interest | (258,129) | 9,030 | (249,099) |
| Cash paid for income taxes | (253,098) | | (253,098) |
| *Memo items:* | | | |
| *Depreciation expense* | (100,620) | | |
| Net cash flows from operating activities | $ 646,057 | $ (39,880) | $ 706,797 |

This amount balances to net change in the balance sheet shown above

**b.**

Rorrow Ltd.
Statement of Cash Flows – Operating Activities
For the Year Ended December 31, 2023

| | |
|---|---|
| Cash flows from operating activities | |
| Cash received from sales | $5,175,686 |
| Cash paid for goods and services | 3,215,206 |
| Cash paid to or on behalf of employees | 751,486 |
| Cash paid for interest | 249,099 |
| Cash paid for income taxes | 253,098 |
| Net cash flows from operating activities | $ 706,797 |

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**EXERCISE 11–11**

**a.** Worksheet for operating activities, direct method:

Lelie Ltd.
Operating Activities

| | Income Statement Accounts | Changes to Working Capital Accounts | Net Cash Flow |
|---|---|---|---|
| Cash received from sales | 225,000 | (100,000) | 125,000 |
| Cash paid for goods and services | (100,000) | (60,000) | |
| | (28,000) | (10,000) | |
| | | 50,000 | (148,000) |
| Cash paid to employees | N/A | | N/A |
| Cash received for interest income | N/A | | N/A |
| Cash paid for interest | N/A | | N/A |
| Cash paid for income taxes | (10,000) | 8,000 | (2,000) |
| *Memo Items:* | | | |
| Depreciation expense | (44,000) | | |
| Gain on sale of buildings | 15,000 | | |
| Dividend payable – financing activity therefore not a W/C account; | | 10,000 | |
| Net cash flows from operating activities | 58,000 | (102,000) | (25,000) |

Note: Dividend payable and current portion of long-term debt are two accounts classified as a current liability for reporting purposes, but they are not sources of working capital because they relate to financing activities.

Lelei Ltd.
Statement of Cash Flows
For the Year Ended December 31, 2023
($000s)

| | | |
|---|---|---|
| *Operating activities* | | |
| Cash received from sales | $ 125 | |
| Cash paid to supplier for goods and services | (148) | |
| Cash paid for income taxes | (2) | |
| Cash flow used by operating activities | | $ (25) |
| *Investing activities* | | |
| Proceeds from sale of patent | $ 45 | |
| Purchase of equipment | (120) | |
| Purchase of patent | (30) | |
| Cash flow used by investing activities | | (105) |
| *Financing activities* | | |
| Proceeds from non-current borrowings | 100 | |
| Common shares issued (140 − 40 non-cash) | 100 | |
| Repayment of non-current borrowings (100 − 80) | (20) | |
| Dividends (20 − 10 dividend payable) | (10) | |
| Cash flow from financing activities | | 170 |
| Net increase in cash | | 40 |
| Cash at beginning of year | | -0- |
| Cash at end of year | | $ 40 |

NOTE: To see solution details for the Investing and Financing activities, refer to the Exercise 11–4 solution from the main chapter solutions.

**b.** The statement of cash flows shows that the company used debt and equity to finance its operations, purchase equipment, and pay dividends. The company generated more cash than it used ($40), from solely its financing activities. The cash flow used by operating activities ($25) is a concern, but on the other hand, this may be acceptable in the first year of operations.

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**EXERCISE 11–12**

Worksheet for operating activities, direct method:

Nueton Ltd.
Operating Activities

| | Income Statement Accounts | Changes to Working Capital Accounts | Net Cash Flow In/(Out) |
|---|---|---|---|
| Cash received from sales | 500,000 | (18,000) | 482,000 |
| Cash paid for goods and services | (300,000) | 30,000 | |
| | (45,000)* | 30,000 | |
| | | (26,000) | (341,200) |
| Cash paid to employees | (30,000) | (9,000) | (39,000) |
| Cash received for interest income | N/A | | N/A |
| Cash paid for interest | (5,000)* | | (5,000) |
| Cash paid for income taxes | (19,200) | (1,200) | (20,220) |
| *Memo Items:* | | | |
| Depreciation expense | (58,600) | | |
| Gain on sale of land* | 2,000 | | |
| Net cash flows from operating activities | 44,380 | (24,400) | (76,580) |

* Other expenses are separated into $30,000 for salaries, $5,000 for interest expense and $45,000 for goods and services.

Neuton Ltd.
Statement of Cash Flows
For Year Ended June 30, 2023

| | | |
|---|---|---|
| Cash flows from operating activities: | | |
| Cash received from sales | $ 482,000 | |
| Cash paid for goods and services | (341,200) | |
| Cash paid to employees | (39,000) | |
| Cash paid for interest expense | (5,000) | |
| Cash paid for income taxes | (20,220) | |
| Net cash inflow from operating activities | | $ 76,580 |
| Cash flows from investing activities: | | |
| Cash received from sale of old equipment (Note 1) | $ 10,000 | |
| Cash paid for new equipment | (58,600) | |
| Net cash outflow from investing activities | | (48,600) |
| Cash flows from financing activities: | | |
| Cash received from issuance of common shares | $ 50,000 | |
| Cash paid to retire notes payable | (30,000) | |
| Cash paid for dividends (Note 2) | (27,180) | |
| Net cash outflow from financing activities | | (7,180) |
| Net increase in cash | | $ 20,800 |
| Cash balance at beginning of year | | 35,000 |
| Cash balance at end of year | | $ 55,800 |

NOTE: To see solution details for the Investing and Financing activities refer to the Exercise 11–7 solution from the main chapter solutions.

## Chapter 12 Solutions

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**EXERCISE 12–1**

The calculation of ratios as shown by the financial statements of Stockwell Inc. for each of the three years is as follows:

**a.** Liquidity ratios

| | | *2024* | *2023* | *2022* |
|---|---|---|---|---|
| Current ratio | | 1.2:1 | 1.0:1 | 1.4:1 |
| Acid-test ratio | | 0.59:1 | 0.48:1 | 0.74:1 |
| Sales | | 210 (a) | 120 | 100 |
| Accounts receivable | –opening | 30 | 20 | 20 |
| | –closing | 38 | 30 | 20 |
| | –average | 34 (b) | 25 | 20 |
| Accounts receivable Collection period (b/a × 365) | | 59 days | 76 days | 73 days |
| Cost of goods sold | | 158 (c) | 80 | 55 |
| Merchandise inventory | –opening | 40 | 30 | 20 |
| | –closing | 60 | 40 | 30 |
| | –average | 50 (d) | 35 | 25 |
| Number of days of sales in inventory (d/c × 365) | | 116 days | 160 days | 166 days |
| Revenue operating cycle | | 175 days | 236 days | 239 days |

- The company's working capital position does not appear to be satisfactory, since the liquid assets appear to be insufficient to meet current obligations. The acid-test ratio is quite low, well below 1:1. The company could obtain additional cash by issuing shares or acquiring long-term debt. Alternately, it may need to seek short-term financing like an operating loan from a bank to provide cash to pay liabilities as they become due.
- Control over accounts receivable and inventories has improved. Even though the dollar value of both of these items has increased, average sales and collection periods have declined in 2024. The liquidity ratios for 2023 as compared with 2024 and 2022 suggest that not enough attention was given during that year to investments in inventories and to the collection of accounts receivable. However, the improvements shown in 2024 indicate that better control is now being exercised over these current assets.

**b.** i. Financial structure

| | *2024* | *2023* | *2022* |
|---|---|---|---|
| Debt to equity ratio | $150/230 = 0.65:1 | $130/100 = 1.30:1 | $50/96 = 0.52:1 |

The appropriate financial structure for Stockwell Inc. cannot be adequately determined without knowledge of its industry, for instance. With the exception of 2023, Stockwell Inc.'s debt to equity ratio indicates a reliance on equity rather than debt financing due to the 2024 share issue. In 2023, however, a bond issue temporarily changed the financial structure. Market rates of interest for debt would need to be evaluated to see if there is potential for leverage (that is, if interest rates are lower than current return on total

assets). If not, it is less likely that any potential for positive leverage exists. In this circumstance a weighting toward equity is reasonable.

ii. The proportion of assets provided by creditors is as follows: 2022 – 34.3% (50/146); 2023 – 56.5% (130/230), and 2024 – 39.5% (150/380).

iii. A disproportionately high percentage of debt, over 60% in both 2023 and 2024, is in current liabilities.

**c.** Other observations:

- The gross profit ratio has declined over the past year, even though sales have more than doubled (2024: \$52/210 = 25%; 2023: \$40/120 = 33%). The decrease in this ratio suggests either that selling prices were reduced in order to dispose of the increased production or that the expansion in production facilities resulted in a higher unit cost; possibly there was a combination of both.
- All funds derived from earnings during the last two years have been retained within the business, since no dividends have been paid. However, the investment in property, plant and equipment assets of \$190 (\$260 − 70) exceeds the \$170 received on the issue of bonds and shares [\$50 + (200 − 80)]. It appears that a substantial part of the funds derived from earnings have been used to finance additions to property, plant and equipment assets rather than to provide working capital. This has weakened the liquidity ratios.

(Other relevant observations are acceptable.)

---

**EXERCISE 12–2**

$$\text{Price-earnings ratio} = \frac{\text{Market price per share}}{\text{Earnings per share}}$$

This ratio indicates the stock market's expectations of profitability for the company. A higher P/E ratio indicates that the market expects the company to be profitable despite relatively lower net income at present. On this basis, company C is preferred.

A: \$35/11 = 3.2

B: \$40/5 = 8

C: \$90/10 = 9

$$\text{Dividend yield} = \frac{\text{Dividends per share}}{\text{Market price per share}}$$

This ratio indicates what short-term cash return shareholders might expect on their investment in common shares of the company.

A: 0

B: \$4/40 = 0.1 or 10%

C: \$6/90 = 0.067 or 6.7%

The stock market indicates that company C is expected to be relatively more profitable than A or B in the future. However, if dividend yield is important to the shareholder, then company B should be chosen. On either basis, company A does not appear to be a good investment.

---

**EXERCISE 12–3**

**a.** Current ratio

$$= \frac{\text{Current assets}}{\text{Current liabilities}}$$

$$= \frac{\text{Cash} + \text{accounts receivable} + \text{inventory} + \text{prepaid expenses}}{\text{Current liabilities}}$$

$$= \$300/60$$

$$= 5{:}1$$

**b.** Return on total assets

$$= \frac{\text{Income from operations}}{\text{Average total assets}}$$

$$= \$46/620$$

$$= 7.4\%$$

**c.** Sales to total assets ratio

$$= \frac{\text{Net sales}}{\text{Average total assets}}$$

$$= \$240/620$$

$$= 38/7\%$$

**d.** Acid-test ratio

$$= \frac{\text{Quick assets}}{\text{Current liabilities}}$$

$$= \frac{\text{Cash} + \text{accounts receivable}}{\text{Current liabilities}}$$

$$= (\$72 + 88)/60$$

$$= 2.7{:}1$$

**e.** Times interest earned ratio

$$= \frac{\text{Income from operations}}{\text{Interest expense}}$$
$$= \$46/8$$
$$= 5.75{:}1$$

**f.** Earnings per common share

$$= \frac{\text{Net income} - \text{preferred share dividends}}{\text{Number of common shares outstanding}}$$
$$= [\$20 - (\$60 \times 10\%)]/10 \text{ shares}$$
$$= \$1.40 \text{ per share}$$

**g.** Accounts receivable collection period

$$= \frac{\text{Average accounts receivable}}{\text{Net credit sales}} \times 365 \text{ days}$$
$$= \$88/(80\% \times \$240) \times 365 \text{ days}$$
$$= 167 \text{ days}$$

**h.** Return on equity

$$= \frac{\text{Net income}}{\text{Equity}}$$
$$= \frac{\text{Net income}}{\text{Preferred shares} + \text{Common shares} + \text{Retained earnings}}$$
$$= \$20/(60 + 250 + 100)$$
$$= 4.9\%$$

---

**EXERCISE 12–4**

**a.** Horizontal analysis:

| | | | *Change* | |
|---|---|---|---|---|
| | *2024* | *2023* | *Amount* | *Percentage* |
| | *(a)* | *(b)* | *(a − b)* | *(a − b)/b* |
| Sales | $2,520 | $1,440 | $+1,080 | +75% |
| Cost of Goods Sold | 1,890 | 960 | +930 | +96.9% |
| Gross Profit | 630 | 480 | +150 | +31.3% |
| Other Expenses | 510 | 430 | +80 | +18.6% |
| Net Income | $120 | $50 | +70 | +140% |

**b.** Although sales have increased, cost of goods sold has increased at a faster pace. However, operating expenses have increased at a slower pace, resulting in a substantially higher net income.

**EXERCISE 12–5**

**a.** Vertical analysis:

Escalade Corporation
Vertical Analysis of the Income Statements
For the Years Ending December 31, 2022–2024

| | *Common–Size Percentages* | | |
|---|---|---|---|
| | *2024* | *2023* | *2022* |
| Sales | 100.0 | 100.0 | 100.0 |
| Cost of Goods Sold | 76.0 | 66.7 | 50.0 |
| Gross Profit | 24.0 | 33.3 | 50.0 |
| Other Expenses | 14.0 | 22.7 | 29.2 |
| Net Income | 10.0 | 10.6 | 20.8 |

**b.** Escalade's gross profit ratio has significantly declined over the past three years. This could be owing to the initial inefficiency of a larger plant or because of selling an increased number of units at a greatly reduced price to obtain a larger share of the market. At any rate, the reasons for this decline should be investigated further. Since other expenses have not increased proportionately, perhaps more money could be put into sales promotion to increase the number of units sold.

**EXERCISE 12–6**

**a.**

$$\text{Current ratio} = \frac{\text{Current assets}}{\text{Current liabilities}}$$

The current ratio indicates how many dollars of current assets exist to pay a dollar of current liabilities. A ratio of 2 to 1 is often appropriate but this depends on the type of industry.

2023: $(\$10 + 35 + 200 + 600) \div 745$ = \$1.13 to 1
2022: $(\$15 + 35 + 150 + 400) \div 580$ = \$1.03 to 1

**b.**

$$\text{Acid-test ratio} = \frac{\text{Quick assets}}{\text{Current liabilities}}$$

The acid-test ratio indicates how many dollars of current assets excluding inventory and prepaid expenses exist to pay a dollar of current liabilities. A ratio of at least 1 to 1 is often appropriate but this depends on the type of industry.

2023: $(\$10 + 35 + 200) \div 745 = \$0.33$ to 1
2022: $(\$15 + 35 + 150) \div 580 = \$0.34$ to 1

**c.** Both the current and acid-test ratios are below the suggested guidelines. The company's continuing low acid-test ratio in particular suggests that it will likely have problems meeting its liabilities as they become due, and that the company may be at risk of bankruptcy.

---

**EXERCISE 12–7**

$$\text{Gross profit ratio} = \frac{\text{Gross profit}}{\text{Net sales}}$$

2024: $\$63 \div 252 = 25\%$
2023: $\$48 \div 141 = 34\%$
2022: $\$54 \div 120 = 45\%$

$$\text{Net profit ratio} = \frac{\text{Net income}}{\text{Net sales}}$$

2024: $\$12 \div 252 = 4.7\%$
2023: $\$5 \div 141 = 3.6\%$
2022: $\$15 \div 120 = 12.5\%$

This company has a decreasing gross profit ratio. This significantly affects net income and the net profit ratio. Net income and the net profit ratio dipped significantly in 2023, but both have rebounded somewhat in 2024. The company may be facing significant competition in recent years; hence the overall decline in the gross profit and net profit ratios.

---

**EXERCISE 12–8**

| *Transaction* | *Ratio* | *Effect on ratio* |
|---|---|---|
| Declared a cash dividend | Current ratio | D |
| Wrote-off an uncollectible account receivable | Accounts receivable collection period | I |
| Purchased inventory on account | Acid-test ratio | D |
| Issued 10-year bonds to acquire property, plant, and equipment | Return on total assets | D |
| Issued additional shares for cash | Debt to shareholders' equity ratio | D |
| Declared a share dividend on common shares | Earnings per share | NC |
| Purchased supplies on account | Current ratio | D |
| Paid a current creditor in full | Acid-test ratio | I |
| Paid an account payable | Number of days of sales in inventory | NC |

---

**EXERCISE 12–9**

**a.** i. Return on total assets
$$= \frac{\text{Income from operations}}{\text{Average total assets}}$$
= ($36/220)
= 16.4%

ii. Return on shareholders' equity
$$= \frac{\text{Net income}}{\text{Average shareholders' equity}}$$
= $20/(80 + 60)
= 14.3%

iii. Times interest earned ratio
$$= \frac{\text{Income from operations}}{\text{Interest expense}}$$
= $36/6
= 6 times

iv. Earnings per share
$$= \frac{\text{Net income}}{\text{Number of common shares outstanding}}$$
= $20/8 shares
= $2.50

v. Number of days of sales in inventory
$$= \frac{\text{Average inventory}}{\text{Cost of goods sold}} \times 365 \text{ days}$$
= $40/50 × 365 days
= 292 days

vi. Accounts receivable collection period
$$= \frac{\text{Accounts receivable}}{\text{Net credit sales}} \times 365 \text{ days}$$

= $20/100 × 365 days
= 73 days

vii. Sales to total assets ratio
$$= \frac{\text{Net sales}}{\text{Average total assets}}$$
= $100/220
= 45%

viii. Current ratio
$$= \frac{\text{Current assets}}{\text{Current liabilities}}$$
= ($20 + 20 + 40)/20
= 4:1

ix. Acid-test ratio
$$= \frac{\text{Quick assets}}{\text{Current liabilities}}$$
= ($20 + 20)/20
= 2:1

x. Debt to shareholders' equity ratio
$$= \frac{\text{Total liabilities}}{\text{Shareholders' equity}}$$
= $(20 + 60)/140)
= 0.57:1

**b.** The following ratios are measures of liquidity:
v. Number of days of sales in inventory
vi. Accounts receivable collection period
viii. Current ratio
ix. Acid-test ratio

---

**EXERCISE 12–10**

**a.** Current assets + capital assets = Total liabilities + shareholders' equity
Current assets + $90 = $40 + 140
Current assets = $90
$$\text{Current ratio} = \frac{\text{Current assets}}{\text{Current liabilities}}$$
2.5 = $90/Current liabilities
Current liabilities = $36

**b.** From above: Current assets = $90; Current liabilities = $36
$$\text{Acid-test Ratio} = \frac{\text{Quick current assets}}{\text{Current liabilities}}$$
Since the Acid-test Ratio is 1:1,
$$\text{Inventory} = \frac{\$90 - \text{inventory} + 0}{\$36}$$
Inventory = $90 – 36
Inventory = $54

**c.** Accounts receivable = Quick current assets – (cash + short-term investments)
$36 – 6 = 30

Accounts rec. collection period = $\frac{\text{Average accounts receivable}}{\text{Net credit sales}} \times 365$ days
= \$30/300 × 365 days
= 37 days

**d.** If gross profit is 30 per cent of sales, the cost of goods sold is 70 per cent of sales (70% × \$420 = \$294). From above, inventory = \$54

Number of days of sales in inventory = $\frac{\text{Average inventory}}{\text{Net credit sales}} \times 365$ days
= \$54/294 × 365 days
= 12 days

**e.** Revenue operating cycle = Accounts receivable collection period + number of days of sales in inventory

= 77 + 12 = 49 days

---

**EXERCISE 12–11**

**a.**

| | *Transaction* | *Effect on current ratio* |
|---|---|---|
| i. | Bought \$20,000 of merchandize on account (the company uses a perpetual inventory system) | D |
| ii. | Sold for \$10,000 cash, merchandize that cost \$5,000 | I |
| iii. | Collected a \$2,500 account receivable | NC |
| iv. | Paid a \$10,000 account payable | I |
| v. | Wrote off a \$1,500 bad debt against the allowance for doubtful accounts | NC* |
| vi. | Declared a \$1 per-share cash dividend on the 10,000 outstanding common shares | D |
| vii. | Paid the dividend declared above | I |
| viii. | Borrowed \$10,000 from a bank by assuming a 60-day, 10-per cent loan | D |
| ix. | Borrowed \$25,000 from a bank by placing a 10-year mortgage on the plant | I |
| x. | Used the \$25,000 proceeds of the mortgage to buy additional machinery | D |

* The journal entry is a debit from Allowance for Doubtful Accounts and a credit to Accounts Receivable.

**b.** At the end of May,

The current ratio was 2.15 to 1, calculated as follows:

| *In thousands of dollars* | | *Bal May 1* | *i* | *ii* | *iii* | *iv* | *v* | *vi* | *vii* | *vii* | *ix* | *x* | *Bal May 31* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Current assets | x | 200 | +20 | +10 | +2.5 | -10 | +1.5 | – | -10 | +10 | +25 | -25 | 215 |
| | | | | -5 | -2.5 | | -1.5 | | | | | | |
| Current liabilities | y | 80 | +20 | – | – | -10 | – | +10 | -10 | +10 | – | – | 100 |
| Current ratio | x/y | 2.5 | | | | | | | | | | | **2.15** |

The acid-test ratio was 1 to 1 calculated as follows:

| *In thousands of dollars* | | *Bal May 1* | *i* | *ii* | *iii* | *iv* | *v* | *vi* | *vii* | *viii* | *ix* | *x* | *Bal May 31* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Quick assets | x | 100 | – | +10 | +2.5 | -10 | +1.5 | – | -10 | +10 | +25 | -25 | 100 |
| | | | | | -2.5 | | -1.5 | | | | | | |
| Current liabilities | y | 80 | +20 | – | – | -10 | – | +10 | -10 | +10 | – | – | 100 |
| Acid-test ratio | x/y | 1.25 | | | | | | | | | | | **1.0** |

## Chapter 13 Solutions

### EXERCISE 13–1

**a.** The income statement is as follows:

B. White and C. Green Partnership
Income Statement
For the Year Ended December 31, 2023

| | | |
|---|---|---|
| Sales | | $322,000 |
| Cost of Goods Sold | | 160,500 |
| Gross Profit | | 161,500 |
| *Operating Expenses* | | |
| Rent | 36,000 | |
| Advertising | 27,200 | |
| Delivery | 9,600 | |
| Office | 12,800 | |
| Utilities | 23,300 | 108,900 |
| Net Income | | $ 52,600 |

**b.** The statement of changes in equity is as follows:

B. White and C. Green Partnership
Statement of Changes in Equity
For the Year Ended December 31, 2023

| | *White* | *Green* | *Total* |
|---|---|---|---|
| Opening Balance | $20,000 | $10,000 | $30,000 |
| Investments | 10,000 | 10,000 | 20,000 |
| Net Income | 26,300 | 26,300 | 52,600 |
| | 56,300 | 46,300 | 102,600 |
| *Less*: Withdrawals | 7,000 | 5,000 | 12,000 |
| Ending Balance | $49,300 | $41,300 | $90,600 |

**c.** The balance sheet is as follows:

B. White and C. Green Partnership
Balance Sheet
At December 31, 2023

| | | |
|---|---|---|
| *Assets* | | |
| Current | | |
| Cash | | $41,000 |
| Accounts Receivable | | 68,400 |
| Inventory | | 27,000 |
| Total Assets | | $136,400 |
| *Liabilities* | | |
| Current | | |
| Accounts Payable | | $45,800 |
| *Equity* | | |
| B. White, Capital | $49,300 | |
| C. Green, Capital | 41,300 | 90,600 |
| Total Liabilities and Equity | | $136,400 |

**d.** The closing entries for the year are as follows:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Sales | | 322,000 | |
| | Income Summary | | | 322,000 |
| | Income Summary | | 269,400 | |
| | Cost of Goods Sold | | | 160,500 |
| | Rent | | | 36,000 |
| | Advertising | | | 27,200 |
| | Delivery | | | 9,600 |
| | Office | | | 12,800 |
| | Utilities | | | 23,300 |
| | Income Summary | | 52,600 | |
| | B. White, Capital | | | 26,300 |
| | C. Green, Capital | | | 26,300 |
| | B. White, Capital | | 7,000 | |
| | B. White, Withdrawals | | | 7,000 |
| | C. Green, Capital | | 5,000 | |
| | C. Green, Withdrawals | | | 5,000 |

---

**EXERCISE 13–2**

**a.** The statement of changes in equity for White's is as follows:

White's
Statement of Changes in Equity
For the Year Ended December 31, 2023

| | |
|---|---|
| Opening Balance | $ 30,000 |
| Investments | 20,000 |
| Net Income | 52,600 |
| | 102,600 |
| *Less*: Withdrawals | 12,000 |
| Ending Balance | $ 90,600 |

**b.** The statement in changes in equity for BW and CG Ltd. is as follows:

BW and CG Ltd.
Statement of Changes in Equity
For the Year Ended December 31, 2023

| | *Share Capital* | *Retained Earnings* | *Total* |
|---|---|---|---|
| Opening Balance | $200 | $29,800 | $30,000 |
| Common Shares Issued | 20,000 | | 20,000 |
| Net Income | | 52,600 | 52,600 |
| Dividends Declared | | (12,000) | (12,000) |
| Ending Balance | $20,200 | $70,400 | $ 90,600 |

**EXERCISE 13–3**

**a.** The journal entry is as follows:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Income Summary . . . . . | | 52,600 | |
| | B. White, Capital . . . . . | | | 32,875 |
| | C. Green, Capital . . . . . | | | 19,725 |
| | To allocate net income as follows: White ($52,600 × 5/8) + Green ($52,600 × 3/8) = $32,875 + 19,725 = $52,600 | | | |

**b.** The journal entry is as follows:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Income Summary . . . . . | | 52,600 | |
| | B. White, Capital . . . . . | | | 37,760 |
| | C. Green, Capital . . . . . | | | 14,840 |

To allocate net income as follows:

| | *White* | *Green* | *Total* |
|---|---|---|---|
| Profit to be allocated | | | $52,600 |
| *Interest allocation:* | | | |
| White: $20,000 × 10% | $ 2,000 | | |
| Green: $10,000 × 10% | | $1,000 | (3,000) |
| Balance | | | 49,600 |
| *Salary allocation:* | 30,000 | 10,000 | (40,000) |
| Balance | | | 9,600 |
| *Balance allocated in profit and loss sharing ratio:* | | | |
| White: $9,600 × 3/5 | 5,760 | | |
| Green: $9,600 × 2/5 | | 3,840 | (9,600) |
| Balance | | | $ -0- |
| Total allocated to partners | $37,760 | $14,840 | |

**EXERCISE 13–4**

**a.** The journal entry is as follows:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Income Summary . . . . . | | 210,000 | |
| | Walsh, Capital . . . . . | | | 85,250 |
| | Abraham, Capital . . . . . | | | 124,750 |

Calculations to allocate net income:

| | *Walsh* | *Abraham* | *Total* |
|---|---|---|---|
| Net income to be allocated | | | $210,000 |
| *Interest allocation:* | | | |
| Walsh: $320,000 × 10% | $32,000 | | |
| Abraham: $400,000 × 10% | | $40,000 | (72,000) |
| Balance | | | 138,000 |
| *Salary allocation:* | 75,000 | 150,000 | (225,000) |
| Balance | | | (87,000) |
| *Balance allocated in profit and loss sharing ratio:* | | | |
| Walsh: ($87,000) × 1/4 | (21,750) | | |
| Abraham: ($87,000) × 3/4 | | (65,250) | 87,000 |
| Balance | | | $ -0- |
| Total allocated to partners | $85,250 | + $124,750 | = $210,000 |

The total actually allocated of $210,000 must equal the net income initially required to be allocated of $210,000.

**b.** The journal entry is as follows:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | C. Abraham, Capital . . . . . | | 104,000 | |
| | B. Walsh, Capital . . . . . | | | 9,000 |
| | Income Summary . . . . . | | | 95,000 |

Calculations to allocate net loss:

| | *Walsh* | *Abraham* | *Total* |
|---|---|---|---|
| Net income to be allocated | | | $(95,000) |
| *Interest allocation:* | | | |
| Walsh: $320,000 × 10% | $32,000 | | |
| Abraham: $400,000 × 10% | | $40,000 | (72,000) |
| Balance | | | (167,000) |
| *Salary allocation:* | 75,000 | 150,000 | (225,000) |
| Balance | | | (392,000) |
| *Balance allocated in profit and loss sharing ratio:* | | | |
| Walsh: ($392,000) × 1/4 | (98,000) | | |
| Abraham: ($392,000) × 3/4 | | (294,000) | 392,000 |
| Balance | | | $ -0- |
| Total allocated to partners | $9,000 | + $(104,000) | = $(95,000) |

The total actually allocated of $(95,000) must equal the net income initially required to be allocated of $(95,000).

---

**EXERCISE 13–5**

**a.** An adjusting entry is needed to reallocate personal income taxes:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Proprietor's Withdrawals . . . . . | | 5,000 | |
| | Income Taxes Expense . . . . . | | | 5,000 |

The statement of profit and loss would then appear as follows:

R. Black Proprietorship
Income Statement
For the Year Ended December 31, 2023

| | |
|---|---|
| Sales | $ 166,000 |
| Cost of goods sold | 100,000 |
| Gross profit | 66,000 |
| *Operating expenses* | |
| Rent | 24,000 |
| Net income | $ 42,000 |

**b.**

R. Black Proprietorship
Statement of Proprietor's Capital
For the Year Ended December 31, 2023

| | |
|---|---|
| Balance at Jan 1, 2023 (derived) | $ -0- |
| Contributions | 5,000 |
| Net income | 42,000 |
| Withdrawals | (12,000) |
| Balance at Dec 31, 2023 | $ 35,000 |

**c.**

R. Black Proprietorship
Balance Sheet
At December 31, 2023

| | |
|---|---|
| *Assets* | |
| *Current* | |
| Cash | $10,000 |
| Accounts receivable | 20,000 |
| Inventory | 30,000 |
| Total assets | $60,000 |
| *Liabilities* | |
| *Current* | |
| Accounts payable | $25,000 |
| *Proprietor's Capital* | |
| R. Black, capital | 35,000 |
| Total liabilities and proprietor's capital | $60,000 |

**d.**

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Sales | | 166,000 | |
| | Cost of Goods Sold | | | 100,000 |
| | Rent Expense | | | 24,000 |
| | Income Summary | | | 42,000 |
| | Income Summary | | 42,000 | |
| | R. Black, Capital | | | 42,000 |
| | R. Black, Capital | | 12,000 | |
| | R. Black, Withdrawals | | | 12,000 |

**EXERCISE 13–6**

**a.**

R. Black Ltd.
Income Statement
For the Year Ended December 31, 2023

| | |
|---|---|
| Sales | $166,000 |
| Cost of goods sold | 100,000 |
| Gross profit | 66,000 |
| *Operating expenses* | |
| Rent | 24,000 |
| Income before income taxes | 42,000 |
| Income taxes | 5,000 |
| Net income | $ 37,000 |

**b.**

R. Black Ltd.
Statement of Changes in Equity
For the Year Ended December 31, 2023

| | Share Capital | Retained Earnings | Total Equity |
|---|---|---|---|
| Balance at Jan 1, 2023 | $5,000 | $ -0- | $ 5,000 |
| Net income | | 37,000 | 37,000 |
| Dividends | | (7,000) | (7,000) |
| Balance at Dec 31, 2023 | $5,000 | $ 30,000 | $35,000 |

**c.**

R. Black Ltd.
Balance Sheet
At December 31, 2023

| | | |
|---|---|---|
| | *Assets* | |
| *Current* | | |
| Cash | | $10,000 |
| Accounts receivable | | 20,000 |
| Inventory | | 30,000 |
| Total assets | | $60,000 |
| | *Liabilities* | |
| *Current* | | |
| Accounts payable | | $25,000 |
| | *Shareholders' Equity* | |
| Share capital | $ 5,000 | |
| Retained earnings | 30,000 | 35,000 |
| Total liabilities and shareholders' equity | | $60,000 |

**d.**

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Sales | | 166,000 | |
| | Cost of Goods Sold | | | 100,000 |
| | Rent Expense | | | 24,000 |
| | Income Taxes Expense | | | 5,000 |
| | Income Summary | | | 37,000 |
| | Income Summary | | 37,000 | |
| | Retained Earnings | | | 37,000 |
| | Income Summary | | 7,000 | |
| | Dividends | | | 7,000 |

---

**EXERCISE 13–7**

**a.**

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | G, Capital . . . . . | | 30,000 | |
| | I, Capital . . . . . | | | 30,000 |
| | To record transfer of G's partnership interest to new partner I. | | | |

**b.**

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | G, Capital ($30,000 − 17,100) . . . . . | | 12,900 | |
| | H, Capital ($10,000 − 17,100) . . . . . | | | 7,100 |
| | I, Capital . . . . . | | | 3,800 |
| | Cash . . . . . | | | 2,000 |
| | To record payment of bonus to new partner I and reallocation of partnership interest. | | | |

Interest calculations:

| | |
|---|---|
| G, Capital | $30,000 |
| H, Capital | 10,000 |
| Bonus payment | (2,000) |
| Capital of new partnership | $38,000 |
| | |
| Allocated as: | |
| G (45%) | $17,100 |
| H (45%) | 17,100 |
| I (10%) | 3,800 |
| | $38,000 |

**c.**

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Land . . . . . | | 100,000 | |
| | G, Capital ($30,000 − 28,000) . . . . . | | 2,000 | |
| | H, Capital ($10,000 − 7,000) . . . . . | | 3,000 | |
| | I, Capital . . . . . | | | 105,000 |
| | To record contribution of assets by new partner I and reallocation of partnership interest. | | | |

Interest calculations:

| | |
|---|---|
| G, Capital | $ 30,000 |
| H, Capital | 10,000 |
| I, Investment | 100,000) |
| Capital of new partnership | $ 140,000 |

| | |
|---|---|
| Allocated as: | |
| G (20%) | $ 28,000 |
| H (5%) | 7,000 |
| I (75%) | 105,000 |
| | $ 140,000 |

---

**EXERCISE 13–8**

**a.**

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | X, Capital<br>T, Capital<br>To record transfer of X's partnership interest to new partner T. | | 10,000 | 10,000 |

**b.**

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | X, Capital<br>Y, Capital<br>To record transfer of X's partnership interest to existing partner Y. | | 10,000 | 10,000 |

**c.**

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | X, Capital<br>Accounts Payable<br>Y, Capital<br>Z, Capital<br>Cash<br>Inventory<br>To record dispersal of partnership net assets to withdrawing partner X and transfer of X's partnership interest to existing partners Y and Z. | | 10,000<br>2,000 | <br><br>1,200<br>800<br>5,000<br>5,000 |

**EXERCISE 13–9**

**a.**

| | |
|---|---|
| Smith, capital | $ 50,000 |
| Jones, capital | 40,000 |
| Black, capital | 10,000 |
| Existing capital | 100,000 |
| Investment by Gray | 5,000 |
| Capital of new partnership (a) | $105,000 |
| | |
| Mood's capital ($105,000 × 25%) | $ 26,250 |

The new partner's bonus is recorded as:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Cash | | 5,000 | |
| | Smith, Capital | | 7,083 | |
| | Jones, Capital | | 7,083 | |
| | Black, Capital | | 7,084 | |
| | Gray, Capital | | | 26,250 |

**b.**

| | |
|---|---|
| Smith, capital | $ 50,000 |
| Jones, capital | 40,000 |
| Black, capital | 10,000 |
| Existing capital | 100,000 |
| Investment by Gray | 60,000 |
| Capital of new partnership (a) | $160,000 |
| | |
| Mood's capital ($160,000 × 25%) | $ 40,000 |

The bonus to existing partners is recorded as:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Cash | | 60,000 | |
| | Smith, Capital | | | 6,667 |
| | Jones, Capital | | | 6,667 |
| | Black, Capital | | | 6,666 |
| | Gray, Capital | | | 40,000 |

# Solutions To Problems

## Chapter 1 Solutions

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**PROBLEM 1–1**

Dumont Inc.
Income Statement
For the Month Ended January 31, 2023

| | | |
|---|---|---|
| *Revenue* | | |
| Service revenue | | $7,500 |
| *Expenses* | | |
| Advertising expense | $500 | |
| Commissions expense | 720 | |
| Insurance expense | 50 | |
| Interest expense | 80 | |
| Rent expense | 400 | |
| Supplies expense | 100 | |
| Telephone expense | 150 | |
| Wages expense | 2,500 | |
| Total expenses | | 4,500 |
| Net income | | $3,000 |

Dumont Inc.
Balance Sheet
At January 31, 2023

| | | |
|---|---|---|
| *Assets* | | |
| Cash | $1,300 | |
| Accounts receivable | 2,400 | |
| Prepaid expenses | 550 | |
| Unused supplies | 750 | |
| Truck | 9,000 | |
| Total assets | | $14,000 |
| *Liabilities* | | |
| Bank loan | $8,000 | |
| Accounts payable | 1,000 | |
| Total liabilities | | 9,000 |
| *Equity* | | |
| Share capital | $2,000 | |
| Retained earnings | 3,000 | |
| Total equity | | 5,000 |
| Total liabilities and equity | | $14,000 |

Dumont Inc.
Statement of Changes in Equity
For the Month Ended January 31, 2023

| | *Share Capital* | *Retained Earnings* | *Total Equity* |
|---|---|---|---|
| Opening balance | $ -0- | $ -0- | $ -0- |
| Shares issued | 2,000 | -0- | 2,000 |
| Net income | -0- | 3,000 | 3,000 |
| Ending balance | $2,000 | $3,000 | $5,000 |

---

**PROBLEM 1–2**

1. The income statement and statement of changes in equity are as follows:

Laberge Sheathing Inc.
Income Statement
For the Month Ended August 31, 2023

| | | |
|---|---|---|
| *Revenue* | | |
| Service revenue | | $2,000 |
| *Expenses* | | |
| Advertising expense | $300 | |
| Interest expense | 500 | |
| Maintenance expense | 475 | |
| Supplies expense | 125 | |
| Wages expense | 2,600 | |
| Total expenses | | 4,000 |
| Net loss | | $2,000 |

Laberge Sheathing Inc.
Balance Sheet
August 31, 2023

| | | |
|---|---|---|
| *Assets* | | |
| Cash | $400 | |
| Accounts receivable | 3,800 | |
| Unused supplies | 100 | |
| Equipment | 8,700 | |
| Total assets | | $13,000 |
| *Liabilities* | | |
| Accounts payable | | $7,800 |
| *Equity* | | |
| Share capital | 3,200 | |
| Retained earnings | 2,000 | 5,200 |
| Total liabilities and equity | | $13,000 |

Laberge Sheathing Inc.
Statement of Changes in Equity
Month Ended August 31, 2023

| | *Share Capital* | *Retained Earnings* | *Total Equity* |
|---|---|---|---|
| Opening balance | $3,200 | $4,000 | $7,200 |
| Net loss | -0- | (2,000) | (2,000) |
| Ending balance | $3,200 | $2,000 | $5,200 |

2. The percentage of assets financed by equity is 40% calculated as (5,200/13,000) $\times$ 100. Although part 2 of this question did not require that the percentage of assets financed by debt be calculated, it is 60% calculated as 100% $-$ 40%.

---

**PROBLEM 1–3**

Larson Services Inc.
Transactions Worksheet
At August 31, 2023

| | ASSETS | | | | | = | LIABILITIES | | | + | EQUITY | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Cash | + Acct. Rec. | + Ppd. Exp. | + Unused Supplies | + Truck | = Bank Loan | + Acct. Pay | + Unearned Revenue | + Share Capital | + Retained Earnings | |
| Aug. 1 | +3,000 | | | | | | | | +3,000 | | |
| 1 | +10,000 | | | | | +10,000 | | | | | |
| 1 | -8,000 | | | | +8,000 | | | | | | |
| 3 | No effect | | | | | | | | | | |
| 4 | -600 | | +600 | | | | | | | | |
| 5 | +2,000 | | | | | | | +2,000 | | | |
| 7 | | +5,000 | | | | | | | | +5,000 | Fees earned |
| 9 | -250 | | | | | | | | | -250 | Supplies expense |
| 12 | | | | +500 | | | +500 | | | | |
| 15 | +1,000 | -1,000 | | | | | | | | | |
| 16 | -200 | | | | | | | | | -200 | Advertising |
| 20 | -250 | | | | | | -250 | | | | |
| 25 | -2,800 | | | | | | | | | -350 | Rent expense |
| | | | | | | | | | | -2,150 | Salaries |
| | | | | | | | | | | -50 | Telephone |
| | | | | | | | | | | -250 | Truck operation |
| 28 | No Effect | | | | | | | | | | |
| 29 | | +6,000 | | | | | | | | +6,000 | Fees earned |
| 31 | | | | | | | | -500 | | +500 | Fees earned |
| | $3,900 | + $10,000 | + $600 | + $500 | + $8,000 | = $10,000 | + $250 | + $1,500 | + $3,000 | + $8,250 | |

Assets = $23,000

Liabilities + Equity = $23,000

## PROBLEM 1–4

Larson Services Inc.
Income Statement
For the Month Ended August 31, 2023

| | | |
|---|---|---|
| *Revenues* | | |
| Fees earned | | $11,500 |
| *Expenses* | | |
| Advertising expense | $200 | |
| Rent expense | 350 | |
| Salaries expense | 2,150 | |
| Supplies expense | 250 | |
| Telephone expense | 50 | |
| Truck operation expense | 250 | |
| Total expenses | | 3,250 |
| Net income | | $8,250 |

Larson Services Inc.
Balance Sheet
At August 31, 2023

| | | |
|---|---|---|
| *Assets* | | |
| Cash | $3,900 | |
| Accounts receivable | 10,000 | |
| Prepaid expenses | 600 | |
| Unused supplies | 500 | |
| Truck | 8,000 | |
| Total assets | | $23,000 |
| *Liabilities* | | |
| Bank loan | $10,000 | |
| Accounts payable | 250 | |
| Unearned revenue | 1,500 | |
| Total liabilities | | 11,750 |
| *Equity* | | |
| Share capital | 3,000 | |
| Retained earnings | 8,250 | |
| Total equity | | 11,250 |
| Total liabilities and equity | | $23,000 |

Larson Services Inc.
Statement of Changes in Equity
For the Month Ended August 31, 2023

| | *Share Capital* | *Retained Earnings* | *Total Equity* |
|---|---|---|---|
| Opening balance | $ -0- | $ -0- | $ -0- |
| Shares issued | 3,000 | -0- | 3,000 |
| Net income | -0- | 8,250 | 8,250 |
| Ending balance | $3,000 | $8,250 | $11,250 |

## PROBLEM 1–5

| | Cash | Accounts receivable | Office supplies | Prepaid expenses | Equipment | Office furniture | Accounts payable | Note/Loan payable | Unearned revenue | Share capital | Retained earnings |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Open Bal | +10,000 | +25,000 | +2,000 | 0 | +25,000 | +15,000 | +35,000 | 0 | 0 | +8,000 | +34,000 |
| 1 | +5,000 | | | | | | | | +5,000 | | |
| 2 | -5,000 | | | | | | | | | | -5,000 |
| 3 | | | +3,000 | | | | +3,000 | | | | |
| 4 | | +27,000 | | | | | | | | | +27,000 |
| 5 | | | | | +3,000 | | | +3,000 | | | |
| 6 | | | | | | | | | | | |
| 7 | | | | | | | +300 | | | | -300 |
| 8 | +20,000 | | | | | | | +20,000 | | | |
| 9 | -8,000 | | | | | | -8,000 | | | | |
| 10 | -3,000 | | | | | | | | | | -3,000 |
| 11 | | +25,000 | | | | | | | | | +25,000 |
| 12 | +25,000 | -25,000 | | | | | | | | | |
| 13 | | | | | | | | | | | |
| 14 | | | | | | | | | | | |
| 15 | -3,500 | | | | | | | | | | -3,500 |
| 16 | -5,000 | | | +5,000 | | | | | | | |
| 17 | -50 | | | | | | | | | | -50 |
| 18 | | | | | | +3,000 | +3,000 | | | | |
| Bal | +35,450 | +52,000 | +5,000 | +5,000 | +28,000 | +18,000 | +33,300 | +23,000 | +5,000 | +8,000 | +74,150 |

**PROBLEM 1–6**

Olivier Bondar Ltd.
Balance Sheet
At May 31, 2024

| | | | | |
|---|---|---|---|---|
| *Assets* | | *Liabilities* | | |
| Cash | $ 35,450 | Accounts payable | $33,300 | |
| Accounts receivable | 52,000 | Note/Loan payable | 23,000 | |
| | | Unearned revenue | 5,000 | |
| Office supplies | 5,000 | Total liabilities | | $ 61,300 |
| Prepaid expenses | 5,000 | | | |
| Equipment | 28,000 | *Equity* | | |
| Office furniture | 18,000 | Share capital | $ 8,000 | |
| | | Retained earnings | 74,150 | |
| | | Total equity | | 82,150 |
| Total assets | $143,450 | Total liabilities and equity | | $143,450 |

# Chapter 2 Solutions

**PROBLEM 2–1**

1. The trial balance is as follows:

Fox Creek Service Limited
Trial Balance
At October 31, 2023

| | *Account Balances* | |
|---|---|---|
| | *Debit* | *Credit* |
| Cash | $1,000 | |
| Accounts Receivable | 6,000 | |
| Equipment | 7,000 | |
| Truck | 9,000 | |
| Bank Loan | | $5,000 |
| Accounts Payable | | 9,000 |
| Wages Payable | | 1,500 |
| Share Capital | | 2,000 |
| Repair Revenue | | 19,000 |
| Advertising Expense | 2,200 | |
| Commissions Expense | 4,500 | |
| Insurance Expense | 500 | |
| Supplies Expense | 800 | |
| Telephone Expense | 250 | |
| Truck Operation Expense | 1,250 | |
| Wages Expense | 4,000 | |
| | $36,500 | $36,500 |

2. The income statement and statement of changes in equity are as follows:

Fox Creek Service Limited
Income Statement
For the Year Ended October 31, 2023

| | | |
|---|---|---|
| *Revenue* | | |
| Repair revenue | | $19,000 |
| *Expenses* | | |
| Advertising expense | $2,200 | |
| Commissions expense | 4,500 | |
| Insurance expense | 500 | |
| Supplies expense | 800 | |
| Telephone expense | 250 | |
| Truck operation expense | 1,250 | |
| Wages expense | 4,000 | |
| Total expenses | | 13,500 |
| Net income | | $ 5,500 |

Fox Creek Service Limited
Statement of Changes in Equity
For the Year Ended October 31, 2023

| | *Share Capital* | *Retained Earnings* | *Total Equity* |
|---|---|---|---|
| Opening Balance | $ -0- | $ -0- | $ -0- |
| Shares Issued | 2,000 | -0- | 2,000 |
| Net Income | -0- | 5,500 | 5,500 |
| Ending Balance | $2,000 | $5,500 | $7,500 |

3. The balance sheet is as follows:

Fox Creek Service Limited
Balance Sheet
At October 31, 2023

| | | |
|---|---|---|
| *Assets* | | |
| Cash | | $ 1,000 |
| Accounts receivable | | 6,000 |
| Equipment | | 7,000 |
| Truck | | 9,000 |
| Total assets | | $23,000 |
| *Liabilities* | | |
| Bank loan | $5,000 | |
| Accounts payable | 9,000 | |
| Wages payable | 1,500 | 15,500 |
| *Equity* | | |
| Share capital | 2,000 | |
| Retained earnings | 5,500 | 7,500 |
| Total liabilities and equity | | $23,000 |

---

**PROBLEM 2–2**

1. The general journal is as follows:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| May 1 | Cash | 101 | 5,000 | |
| | Share Capital | 320 | | 5,000 |
| | To record issuance of share capital. | | | |
| 5 | Accounts Receivable | 110 | 3,000 | |
| | Service Revenue | 470 | | 3,000 |
| | To record billings to customers. | | | |
| 6 | Cash | 101 | 2,000 | |
| | Service Revenue | 470 | | 2,000 |
| | To record cash payment by customers for work completed. | | | |
| 10 | Cash | 101 | 1,500 | |
| | Accounts Receivable | 110 | | 1,500 |
| | To record collections on account. | | | |
| 11 | Equipment | 183 | 2,000 | |
| | Cash | 101 | | 1,000 |
| | Accounts Payable | 210 | | 1,000 |
| | To record purchase of equipment partially paid by cash, remainder on account. | | | |
| 15 | Cash | 101 | 1,200 | |
| | Accounts Receivable | 110 | | 1,200 |
| | To record payment received on account. | | | |
| 16 | Prepaid Advertising | 160 | 500 | |
| | Cash | 101 | | 500 |
| | To record payment of advertising in advance. | | | |
| 18 | Accounts Receivable | 110 | 2,500 | |
| | Service Revenue | 470 | | 2,500 |
| | To record billings to customers. | | | |
| 20 | Unused Supplies | 173 | 300 | |
| | Cash | 101 | | 300 |
| | To record purchase of supplies for inventory. | | | |
| 21 | Cash | 101 | 800 | |
| | Equipment | 183 | | 800 |
| | To record sale of equipment at cost. | | | |
| 22 | Accounts Payable | 210 | 600 | |
| | Cash | 101 | | 600 |
| | To record payment of amounts owing. | | | |
| 23 | Telephone Expense | 669 | 150 | |
| | Accounts Payable | 210 | | 150 |
| | To record receipt of telephone bill. | | | |
| 24 | Commissions Expense | 615 | 1,100 | |
| | Accounts Payable | 210 | | 1,100 |
| | To record receipt of commissions bill. | | | |
| 28 | Rent Expense | 654 | 400 | |
| | Cash | 101 | | 400 |
| | To record payment of rent for May. | | | |
| 29 | Salaries Expense | 656 | 3,500 | |
| | Cash | 101 | | 3,500 |
| | To record payment of wages incurred. | | | |

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| 30 | Supplies Expense | 668 | 100 | |
| | Unused Supplies | 173 | | 100 |
| | To record supplies used during the month. | | | |
| 31 | Advertising Expense | 610 | 250 | |
| | Prepaid Advertising | 160 | | 250 |
| | To record expiry of prepaid advertising. | | | |

2. The Trial Balance is as follows:

Davidson Tools Rentals Corporation
Trial Balance
May 31, 2023

| | *Account Balances* | |
|---|---|---|
| | *Debit* | *Credit* |
| Cash | $4,200 | |
| Accounts Receivable | 2,800 | |
| Prepaid Advertising | 250 | |
| Unused Supplies | 200 | |
| Equipment | 1,200 | |
| Accounts Payable | | $1,650 |
| Share Capital | | 5,000 |
| Service Revenue | | 7,500 |
| Advertising Expense | 250 | |
| Commissions Expense | 1,100 | |
| Rent Expense | 400 | |
| Supplies Expense | 100 | |
| Salaries Expense | 3,500 | |
| Telephone Expense | 150 | – |
| | $14,150 | $14,150 |

| Cash | | 101 |
|---|---|---|
| 5,000 | | 1,000 |
| 2,000 | | 500 |
| 1,500 | | 300 |
| 1,200 | | 600 |
| 800 | | 400 |
| – | | 3,500 |
| Bal. 4,200 | | |

| Accounts Receivable | | 110 |
|---|---|---|
| 3,000 | | 1,500 |
| 2,500 | | 1,200 |
| Bal. 2,800 | | |

| Prepaid Advertising | | 160 |
|---|---|---|
| 500 | | 250 |
| Bal. 250 | | |

| Unused Supplies | | 173 |
|---|---|---|
| 300 | | 100 |
| Bal. 200 | | |

| Equipment | | 183 |
|---|---|---|
| 2,000 | | 800 |
| Bal. 1,200 | | |

| Accounts Payable | | 210 |
|---|---|---|
| 600 | | 1,000 |
| | | 150 |
| | | 1,100 |
| | Bal. | 1,650 |

| Share Capital | | 320 |
|---|---|---|
| | | 5,000 |

| Service Revenue | | 460 |
|---|---|---|
| | | 3,000 |
| | | 2,000 |
| | | 2,500 |
| | Bal. | 7,500 |

| Advertising Expense | 610 |
|---|---|
| 250 | |

| Commissions Expense | 615 |
|---|---|
| 1,100 | |

| Rent Expense | 654 |
|---|---|
| 400 | |

| Salaries Expense | 656 |
|---|---|
| 3,500 | |

| Supplies Expense | 668 |
|---|---|
| 100 | |

| Telephone Expense | 669 |
|---|---|
| 150 | |

## PROBLEM 2–3

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Apr. 2023 | Cash | | 2,000 | |
| | Accounts receivable | | | 2,000 |
| | (a) To record a collection on account. | | | |
| | Accounts Receivable | | 3,000 | |
| | Service Revenue | | | 3,000 |
| | (b) To record billings to customers. | | | |
| | Advertising Expense | | 300 | |
| | Salaries Expense | | 2,000 | |
| | Telephone Expense | | 100 | |
| | Cash | | | 2,400 |
| | (c) To record payment of expenses incurred. | | | |
| | Accounts payable | | 1,000 | |
| | Cash | | | 1,000 |
| | (d) To record payment made on account. | | | |
| | Truck Operation Expense | | 500 | |
| | Accounts Payable | | | 500 |
| | (e) To record bill received for truck repair expense. | | | |
| | Cash | | 2,500 | |
| | Accounts Receivable | | | 2,500 |
| | (f) To record payment received on account. | | | |
| | Accounts Receivable | | 1,500 | |
| | Service revenue | | | 1,500 |
| | (g) To record billings to customers. | | | |
| | Rent Expense | | 500 | |
| | Prepaid Rent | | | 500 |
| | (h) To record expiry of a portion of prepaid rent. | | | |
| | Supplies Expense | | 150 | |
| | Unused Supplies | | | 150 |
| | (i) To record supplies used, based on count of unused supplies at end of month. | | | |

## PROBLEM 2–4

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Aug. 1 | Cash | | 3,000 | |
| | Share Capital | | | 3,000 |
| | To record issuance of share capital. | | | |
| 1 | Cash | | 10,000 | |
| | Bank Loan | | | 10,000 |
| | To record amount borrowed from bank. | | | |
| 1 | Truck | | 8,000 | |
| | Cash | | | 8,000 |
| | To record purchase of a used truck. | | | |
| 4 | Prepaid Insurance | | 600 | |
| | Cash | | | 600 |
| | To record payment of a one-year insurance policy. | | | |
| 5 | Cash | | 2,000 | |
| | Fees Earned | | | 2,000 |
| | To record collection of cash fees from a customer. | | | |
| 7 | Accounts Receivable | | 5,000 | |
| | Fees Earned | | | 5,000 |
| | To record billings to customers. | | | |
| 9 | Supplies Expense | | 250 | |
| | Cash | | | 250 |
| | To record payment of supplies used. | | | |
| 12 | Unused Supplies | | 500 | |
| | Accounts Payable | | | 500 |
| | To record purchase of supplies on account. | | | |
| 15 | Cash | | 1,000 | |
| | Accounts Receivable | | | 1,000 |
| | To record collection of customer accounts. | | | |
| 16 | Advertising Expense | | 200 | |
| | Cash | | | 200 |
| | To record payment of advertising expense. | | | |
| 20 | Accounts Payable | | 250 | |
| | Cash | | | 250 |
| | To record payment made on account. | | | |
| 25 | Rent Expense | | 350 | |
| | Salaries Expense | | 2,150 | |
| | Telephone Expense | | 50 | |
| | Truck Operation Expense | | 250 | |
| | Cash | | | 2,800 |
| | To record cash payment of expenses. | | | |
| 29 | Accounts Receivable | | 6,000 | |
| | Fees Earned | | | 6,000 |
| | To record billings to customers. | | | |

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| 31 | Insurance Expense . . . . . | | 50 | |
| | Prepaid Insurance . . . . . | | | 50 |
| | To record insurance expired for August ($600/12 months). | | | |
| 31 | Supplies Expense . . . . . | | 400 | |
| | Unused Supplies . . . . . | | | 400 |
| | To record supplies used; $500 purchased on Aug. 12 less $100 still on hand. | | | |

**NOTE**: *No entry is recorded for August 28 because a transaction did not occur.*

---

**PROBLEM 2–5**

Cushio Corp.
Trial Balance
At August 31, 2024

| | Incorrect | | Adjustments | | | | Correct Balance | |
|---|---|---|---|---|---|---|---|---|
| | Debit | Credit | | Debit | | Credit | Debit | Credit |
| Cash | 102,000 | | | | | | 102,000 | |
| Accounts receivable | 59,730 | | 3 | 270 | 1 | 5,000 | 55,000 | |
| Prepaid expenses | 2,000 | | 6 | 6,000 | | | 8,000 | |
| Office supplies inventory | 5,500 | | | | | | 5,500 | |
| Equipment | 115,000 | | 5 | 10,000 | | | 125,000 | |
| Accounts payable | | 74,500 | | | 4 | 500 | | 85,000 |
| | | | | | 5 | 10,000 | | |
| Unearned revenue | | 50,000 | 2 | 5,000 | | | | 45,000 |
| Share capital | | 25,000 | | | | | | 25,000 |
| Retained earnings | | 50,500 | | | | | | 50,500 |
| Revenue | | 245,000 | | | 2 | 5,000 | | 250,000 |
| Repairs expense | 1,000 | | 4 | 500 | | | 1,500 | |
| Rent expense | 25,000 | | | | | | 25,000 | |
| Advertising expense | 24,500 | | | | 6 | 6,000 | 18,500 | |
| Salaries expense | 115,000 | | | | | | 115,000 | |
| | 449,730 | 445,000 | | 21,770 | | 26,500 | 455,500 | 455,500 |

---

**PROBLEM 2–6**

1.

a. No entry

b.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Prepaid expense . . . . . | | 12,000 | |
| | Cash . . . . . | | | 12,000 |

c.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Accounts payable . . . . . | | 57,500 | |
| | Cash . . . . . | | | 57,500 |
| | ($115,000 × 50%) | | | |

d. No entry

e.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Cash . . . . . | | 200,000 | |
| | Unearned service revenue . . . . . | | | 200,000 |

f. No entry

g. No entry

h.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Accounts receivable . . . . . | | 12,000 | |
| | Service revenue . . . . . | | | 12,000 |

i.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Cash . . . . . | | 6,000 | |
| | Accounts receivable . . . . . | | | 6,00 |

j.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Cash . . . . . | | 20,000 | |
| | Unearned service revenue . . . . . | | | 20,000 |

k.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Cash | | 150,000 | |
| | Note payable | | | 150,000 |

l.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Cash | | 30,000 | |
| | Equipment | | 10,000 | |
| | Share capital | | | 40,000 |

m.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Prepaid rent | | 18,000 | |
| | Cash | | | 18,000 |

n.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Land | | 250,000 | |
| | Building/Warehouse | | 60,000 | |
| | Note payable | | | 260,000 |
| | Cash | | | 50,000 |

o. No entry

p.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Accounts receivable | | 30,000 | |
| | Service revenue | | | 30,000 |

q.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Equipment | | 8,000 | |
| | Equipment | | | 3,000 |
| | Cash | | | 5,000 |

r.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Retained earnings . . . . . | | 1,000 | |
| | Cash . . . . . | | | 1,000 |

s.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Service revenue . . . . . | | 2,000 | |
| | Accounts receivable . . . . . | | | 2,000 |

t.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Salaries expense . . . . . | | 35,000 | |
| | Cash . . . . . | | | 35,000 |

u.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Utilities expense . . . . . | | 1,800 | |
| | Accounts payable . . . . . | | | 1,800 |

v.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Office equipment . . . . . | | 5,000 | |
| | Office supplies . . . . . | | 2,000 | |
| | Accounts payable . . . . . | | | 7,000 |

w. No entry

2.

Stellar Services Ltd.
Income Statement
For the Month Ended December 31, 2023

| | | |
|---|---|---|
| **Revenues** | | |
| Service revenue | | $65,000 |
| **Expenses** | | |
| Repairs expense | $ 500 | |
| Salaries expense | 67,000 | |
| Utilties expense | 6,300 | 73,800 |
| Net loss | | $(8,800) |

Stellar Services Ltd.
Statement of Changes in Equity
For the Month Ended December 31, 2023

| | Share Capital | Retained Earnings | Total Equity |
|---|---|---|---|
| Opening balance, December 31, 2023 | $108,000 | $ 90,000 | $198,000 |
| Shares issued | 40,000 | | 40,000 |
| Net loss | | (8,800) | (8,800) |
| Dividends*** | | (1,000) | (1,000) |
| Ending balance | $148,000 | $ 80,200 | $228,200 |

Stellar Services Ltd.
Balance Sheet
At December 31, 2023

| | | | | |
|---|---|---|---|---|
| *Assets* | | *Liabilities* | | |
| Cash | $377,500 | Accounts payable | $ 66,300 | |
| Accounts receivable | 119,000 | Note payable | 430,000 | |
| Office supplies | 9,000 | Unearned consulting fees | 220,000 | |
| Prepaid expenses | 30,000 | Total liabilities | | $716,300 |
| Land | 250,000 | | | |
| Building/Warehouse | 60,000 | | | |
| Equipment | 60,000 | *Equity* | | |
| Office equipment | 5,000 | Share capital | $148,000 | |
| Furniture | 15,000 | Retained earnings | 80,200 | |
| Vehicle | 19,000 | Total equity | | |
| | | Total liabilities and equity | | 228,200 |
| Total assets | $944,500 | | | $944,500 |

## PROBLEM 2–7

| Date | Transaction | Journal | Subledger |
|---|---|---|---|
| Dec 1 | Issued shares to the company's founder for cash | CR | |
| 1 | Issued a cheque for rent to the building owner | CD | |
| 2 | Purchased 100 books on credit from the publisher | P | AP and MI |
| 4 | Borrowed money from bank (i.e. a note payable) | CR | |
| 5 | Purchased office furniture on account | P | AP |
| 6 | Return 5 books to the publisher due to missing pages | P | AP and MI |
| 12 | Sold 20 books to Fred's Cigar Store on account (credit) | S | AR and MI |
| 13 | Paid cash for a two-year insurance policy effective immediately | CD | |
| 15 | Paid cash for some office supplies | CD | |
| 19 | Issued a cheque to the bank for the note payable interest | CD | |
| 20 | Hired an employee and paid her first week's salary in cash | CD | |
| 22 | Sold 10 books for cash | CR | MI |
| 27 | Fred's Cigar Store returned five of the books purchased earlier and the amount owing was adjusted (accounts receivable) | S | AR and MI |
| 27 | Received cash from Fred's Cigar Store for amount owing | CR | AR |
| 28 | Found an error in the accounting records and recorded a correcting entry | GJ | |
| 29 | Received cash from a customer for 100 books. 50% of the books will be sent immediately and the remained to be sent in January | CR | MI |
| 30 | A cheque was issued for rent for January, 2026 | CD | |
| 30 | Dividends were paid in cash to the company founder | CD | |

## PROBLEM 2–8

1.

**Credit Sales Journal** S1

| Date | Billing # | Customer | Ref | Accounts Receivable | Consulting Services Revenue | Vintage Model Plane Sales | Other | Desc |
|---|---|---|---|---|---|---|---|---|
| | | | | Debit | Credit | Credit | | |
| Jun 2 | 17001 | Cooper Co. | | $ 8,000 | $ 8,000 | | | |
| Jun 6 | 17002 | Mr. F. Scott | | 12,500 | | $ 12,500 | | |
| Jun 25 | 17003 | Boyzee Villages Corp. | | 35,000 | 35,000 | | | |
| Totals | | | | $ 55,500 | $ 43,000 | $ 12,500 | | |

**Credit Purchases Journal** P1

| Date | Inv # | Creditor | Ref | Accounts Payable | Equipment Purchases | Advertising Expense | Other Purchases | Desc |
|---|---|---|---|---|---|---|---|---|
| | | | | Credit | Debit | Debit | Debit | |
| Jun 1 | | Bradley & Co. | | $ 12,000 | $ 12,000 | | | Equipment |
| Jun 10 | | Daily Gazette | | 1,200 | | $ 1,200 | | Advertising exp |
| Totals | | | | $ 13,200 | $ 12,000 | $ 1,200 | | |

**Cash Receipts Journal** CR1

| Date | Billing # | Customer | Ref | Cash | Sales Discount | Accounts Receivable | Cash Sales | Other | Desc |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Debit | Debit | Credit | Credit | Credit | |
| Jun 7 | | Cash sale | | $ 2,000 | | | $2,000 | | |
| Jun 8 | 17001 | Cooper Co. | | 7,920 | $ 80 | $ 8,000 | | | |
| Jun 11 | Dep | Ft Robbins Br Builders | | 5,000 | | | | $ 5,000 | Unearned Consulting Fees |
| Jun 14 | | Bank of Trust | | 10,000 | | | | 10,000 | Note Payable |
| Jun 18 | 17002 | F. Scott | | 5,000 | | 5,000 | | | |
| Jun 22 | | Shares Issued | | 5,000 | | | | 5,000 | Share Capital |
| Totals | | | | $34,920 | $ 80 | $ 13,000 | $2,000 | $20,000 | |

**Cash Disbursements Journal** CD1

| Date | Chq # | Payee | Ref | Cash | Purchase Discount | Accounts Payable | Other Disbursements | Desc |
|---|---|---|---|---|---|---|---|---|
| | | | | Credit | Credit | Debit | Debit | |
| Jun 3 | 601 | LRS Properties Ltd. | | $ 3,500 | | | $ 3,500 | Rent expense |
| Jun 4 | 602 | Office Supplies Ltd. | | 1,240 | | | 1,240 | Office supplies |
| Jun 9 | 603 | Salary | | 1,400 | | | 1,400 | Salary expense |
| Jun 10 | 604 | Bradley & Co. | | 2,400 | | $ 2,400 | | |
| Jun 23 | 605 | HTC Power Corp. | | 350 | | | 350 | Utilities expense |
| Jun 28 | 606 | Daily Gazette | | 1,188 | $ 12 | 1,200 | | |
| Jun 29 | 607 | Bill Sloan | | 200 | | | 200 | Cash dividends |
| Jun 30 | 608 | Bank of Trust | | 1,000 | | | 30 | Interest expense |
| | | | | | | | 970 | Note payable |
| Jun 30 | 609 | Salary | | 1,600 | | | 1,600 | Salary expense |
| Totals | | | | $12,878 | $ 12 | $ 3,600 | $ 9,290 | |

**General Journal** GJ1

| Date | Account/Explanation | PR | Debit | Credit |
|---|---|---|---|---|
| Jun 30 | Interest expense . . . . . | | 5 | |
| | Note payable . . . . . | | | 5 |
| | Correction to Interest expense for the bank loan | | | |
| Totals | | | 5 | 5 |

2.

| Accounts Receivable Subledger | | | | |
|---|---|---|---|---|
| Name: Cooper Co. | | | | |
| Date | Ref | Debit | Credit | Balance |
| Jun 2 | 17001 | 8,000 | | 8,000 |
| Jun 8 | 17001 | | 8,000 | – |
| Name: Mr. F. Scott | | | | |
| Date | Ref | Debit | Credit | Balance |
| Jun 6 | 17002 | 12,500 | | 12,500 |
| Jun 18 | 17002 | | 5,000 | 7,500 |
| Name: Boyzee Villages Corp. | | | | |
| Date | Ref | Debit | Credit | Balance |
| Jun 25 | 17003 | 35,000 | | 35,000 |

| Accounts Payable Subledger | | | | |
|---|---|---|---|---|
| Name: Bradley & Co. | | | | |
| Date | Ref | Debit | Credit | Balance |
| Jun 1 | | | 12,000 | 12,000 |
| Jun 10 | | 2,400 | | 9,600 |
| Name: Daily Gazette | | | | |
| Date | Ref | Debit | Credit | Balance |
| Jun 10 | | | 1,200 | 1,200 |
| Jun 28 | | 1,200 | | – |

| General Ledger | | | | | |
|---|---|---|---|---|---|
| Name: Cash | | | | | |
| Date | Ref | Debit | Credit | Balance | |
| Jun 30 | CR1 | 34,920 | | DR | 34,920 |
| Jun 30 | CD1 | | 12,878 | DR | 22,042 |
| Name: Accounts Receivable | | | | | |
| Date | Ref | Debit | Credit | Balance | |
| Jun 30 | S1 | 55,500 | | DR | 55,500 |
| Jun 30 | CR1 | | 13,000 | DR | 42,500 |
| Name: Office Supplies | | | | | |
| Date | Ref | Debit | Credit | Balance | |
| Jun 30 | CD1 | 1,240 | | DR | 1,240 |
| Name: Equipment | | | | | |
| Date | Ref | Debit | Credit | Balance | |
| Jun 30 | P1 | 12,000 | | DR | 12,000 |
| Name: Accounts Payable | | | | | |
| Date | Ref | Debit | Credit | Balance | |
| Jun 30 | P1 | | 13,200 | CR | 13,200 |
| Jun 30 | CD1 | 3,600 | | CR | 9,600 |
| Name: Unearned Consulting Fees | | | | | |
| Date | Ref | Debit | Credit | Balance | |
| Jun 30 | CR1 | | 5,000 | CR | 5,000 |
| Name: Note Payable | | | | | |
| Date | Ref | Debit | Credit | Balance | |
| Jun 30 | CR1 | | 10,000 | CR | 10,000 |
| Jun 30 | CD1 | 970 | | CR | 9,030 |
| Jun 30 | GJ1 | | 5 | CR | 9,035 |
| Name: Share Capital | | | | | |
| Date | Ref | Debit | Credit | Balance | |
| Jun 30 | CR1 | | 5,000 | CR | 5,000 |
| Name: Cash Dividends | | | | | |
| Date | Ref | Debit | Credit | Balance | |
| Jun 30 | CD1 | 200 | | DR | 200 |

| General Ledger | | | | | |
|---|---|---|---|---|---|
| Name: Consulting Services Revenue | | | | | |
| Date | Ref | Debit | Credit | Balance | |
| Jun 30 | S1 | | 43,000 | CR | 43,000 |
| Name: Vintage Model Plane Sales | | | | | |
| Date | Ref | Debit | Credit | Balance | |
| Jun 30 | S1 | | 12,500 | CR | 12,500 |
| Jun 30 | CR1 | | 2,000 | CR | 14,500 |
| Name: Sales Discount | | | | | |
| Date | Ref | Debit | Credit | Balance | |
| Jun 30 | CR1 | 80 | | DR | 80 |
| Name: Advertising Expenses | | | | | |
| Date | Ref | Debit | Credit | Balance | |
| Jun 30 | P1 | 1,200 | | DR | 1,200 |
| Jun 30 | CD1 | | 12 | DR | 1,188 |
| Name: Rent Expense | | | | | |
| Date | Ref | Debit | Credit | Balance | |
| June 30 | CD1 | 3,500 | | DR | 3,500 |
| Name: Salary Expense | | | | | |
| Date | Ref | Debit | Credit | Balance | |
| Jun 30 | CD1 | 3,000 | | DR | 3,000 |
| Name: Utilities Expense | | | | | |
| Date | Ref | Debit | Credit | Balance | |
| Jun 30 | CD1 | 350 | | DR | 350 |
| Name: Interest Expense | | | | | |
| Date | Ref | Debit | Credit | Balance | |
| Jun 30 | CD1 | 30 | | DR | 30 |
| Jun 30 | GJ1 | 5 | | DR | 35 |

3.

Harmand Ltd.
Trial Balance
As at June 30th, 20XX

| | *Debit* | *Credit* |
|---|---|---|
| Cash | $22,042 | |
| Accounts receivable | 42,500 | |
| Office supplies | 1,240 | |
| Equipment | 12,000 | |
| Accounts payable | | 9,600 |
| Unearned consulting fees | | 5,000 |
| Note payable | | 9,035 |
| Share capital | | 5,000 |
| Cash dividends | 200 | |
| Consulting services revenue | | 43,000 |
| Vintage Model Plane Sales | | 14,500 |
| Sales discount | 80 | |
| Advertising expense | 1,188 | |
| Rent expense | 3,500 | |
| Salary expense | 3,000 | |
| Utilities expense | 350 | |
| Interest expense | 35 | |
| | $86,135 | $86,135 |

4.

Harmand Ltd.
Income Statement
For the Month Ended June 30, 20XX

| | | |
|---|---|---|
| *Revenues* | | |
| Consulting services revenue | $43,000 | |
| Vintage Model Plane Sales | 14,500 | $57,500 |
| *Expenses* | | |
| Sales discount | $ 80 | |
| Advertising expense | 1,188 | |
| Rent expense | 3,500 | |
| Salary expense | 3,000 | |
| Utilities expense | 350 | |
| Interest expense | 35 | 8,153 |
| Net income | | $49,347 |

Harmand Ltd.
Statement of Changes in Equity
For the Month Ended June 30, 20XX

| | *Share Capital* | *Retained Earnings* | *Total Equity* |
|---|---|---|---|
| Balance, beginning of period | $ – | $ – | $ – |
| Shares Issued | 5,000 | | 5,000 |
| Net Income | | 49,347 | 49,347 |
| Dividends | | (200) | (200) |
| Ending Balance | $5,000 | $49,147 | $54,147 |

Harmand Ltd.
Balance Sheet
At June 30, 20XX

| | | |
|---|---|---|
| *Assets* | | |
| Cash | $22,042 | |
| Accounts receivable | 42,500 | |
| Office supplies | 1,240 | |
| Equipment | 12,000 | |
| Total assets | | $77,782 |
| *Liabilities* | | |
| Accounts payable | $ 9,600 | |
| Unearned consulting fees | 5,000 | |
| Note payable | 9,035 | |
| Total liabilities | | 23,635 |
| *Equity* | | |
| Share capital | $ 5,000 | |
| Retained earnings | 49,147 | |
| Total equity | | 54,147 |
| Total liabilities and equity | | $77,782 |

## Chapter 3 Solutions

**PROBLEM 3–1**

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Rent Expense | | 300 | |
| | Prepaid Rent | | | 300 |
| | (a) To record rent expense at year end. | | | |
| | Wages Expense | | 200 | |
| | Wages Payable | | | 200 |
| | (b) To record accrued wages at year-end. | | | |
| | Income Taxes Expense | | 1,000 | |
| | Income Taxes Payable | | | 1,000 |
| | (c) To record income taxes. | | | |
| | Unearned Commissions Revenue | | 1,000 | |
| | Commissions Earned | | | 1,000 |
| | (d) To record commissions earned at year-end. | | | |
| | Other Unearned Revenue | | 5,000 | |
| | Revenue | | | 5,000 |
| | (e) To adjust unearned revenue to actual at year end. | | | |
| | Prepaid Advertising | | 1,500 | |
| | Advertising Expense | | | 1,500 |
| | (f) To correct advertising expense and record prepaid advertising at year-end. | | | |
| | Depreciation Expense – Equipment | | 500 | |
| | Accumulated Depreciation – Equipment | | | 500 |
| | (g) To record depreciation expense. | | | |
| | Unused Supplies | | 225 | |
| | Supplies Expense | | | 225 |
| | (h) To correct supplies expense and adjust for unused supplies. | | | |
| | Truck Expense | | 500 | |
| | Accounts Payable | | | 500 |
| | (i) To record accounts payable at year-end. | | | |

## PROBLEM 3–2

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Unused Supplies | | 100 | |
| | Supplies Expense | | | 100 |
| | (a) | | | |
| | Telephone Expense | | 75 | |
| | Accounts Payable | | | 75 |
| | (b) | | | |
| | Wages Expense | | 125 | |
| | Wages Payable | | | 125 |
| | (c) | | | |
| | Depreciation Expense – Equipment | | 100 | |
| | Accumulated Depreciation – Equipment | | | 100 |
| | (d) | | | |
| | Rent Expense | | 500 | |
| | Prepaid Rent | | | 500 |
| | (e) | | | |
| | Unearned Advertising Revenue | | 500 | |
| | Other Revenue | | | 500 |
| | (f) | | | |
| | Prepaid Insurance* | | 525 | |
| | Insurance Expense | | | 525 |
| | (g) | | | |

**$900/12 months = $75/month; 5 months have been used (August 1 to December 31 = 5 months); therefore 7 months × $75/month = $525 remains unused.*

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**PROBLEM 3–3**

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Interest Receivable | | 250 | |
| | Interest Earned | | | 250 |
| | (a) | | | |
| | Insurance Expense | | 200 | |
| | Prepaid Insurance | | | 200 |
| | (b) | | | |
| | Supplies Expense | | 200 | |
| | Unused Supplies | | | 200 |
| | (c) | | | |
| | Interest Expense | | 25 | |
| | Interest Payable | | | 25 |
| | (d) | | | |
| | Subscription Revenue | | 7,500 | |
| | Unearned Subscription Revenue | | | 7,500 |
| | (e) ($9,000 × 5/6 mos. = $7,500) | | | |
| | Salaries Expense | | 300 | |
| | Salaries Payable | | | 300 |
| | (f) | | | |
| | Prepaid Rent | | 300 | |
| | Rent Expense | | | 300 |
| | (g) | | | |
| | Truck Operation Expense | | 400 | |
| | Accounts Payable | | | 400 |
| | (h) | | | |

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**PROBLEM 3–4**

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Depreciation Expense – Truck . . . . . | | 150 | |
| | Accumulated Depreciation – Truck . . . . | | | 150 |
| | (a) ($6,000 × 6/48 mos. = $750 − 600 = $150) | | | |
| | (b) No Entry Required | | | |
| | Unused Supplies . . . . . | | 300 | |
| | Supplies Expense . . . . . | | | 300 |
| | (c) | | | |
| | Rent Expense . . . . . | | 400 | |
| | Prepaid Rent . . . . . | | | 400 |
| | (d) | | | |
| | Wages Expense . . . . . | | 250 | |
| | Wages Payable . . . . . | | | 250 |
| | (e) | | | |
| | Interest Expense . . . . . | | 200 | |
| | Interest Payable . . . . . | | | 200 |
| | (f) ($8,000 × 10% = $800 − 600 = $200) | | | |
| | Utilities Expense . . . . . | | 150 | |
| | Utilities Payable . . . . . | | | 150 |
| | (g) | | | |
| | Insurance Expense . . . . . | | 500 | |
| | Prepaid Insurance . . . . . | | | 500 |
| | (h) ($1,200 × 1/12 mos. = $100 prepaid; $600 − 100 = $500) | | | |
| | Unearned Rent Revenue . . . . . | | 600 | |
| | Rent Earned . . . . . | | | 600 |
| | (i) | | | |
| | Commissions Earned . . . . . | | 2,000 | |
| | Other Unearned Revenue . . . . . | | | 2,000 |
| | (j) | | | |

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**PROBLEM 3–5**

1., 3., 4., and 6.

Roth Contractors Corporation

| Cash | | | 101 |
|---|---|---|---|
| (a) | 5,000 | (b) | 1,200 |
| (g) | 800 | (e) | 1,800 |
| (i) | 2,000 | (h) | 3,450 |
| (m) | 2,000 | (l) | 3,225 |
| Bal. | 125 | | |

| Accounts Receivable | | | 110 |
|---|---|---|---|
| (f) | 4,500 | (i) | 2,000 |
| (j) | 6,500 | | |
| Bal. | 9,000 | | |

| Prepaid Insurance | | | 161 |
|---|---|---|---|
| (e) | 1,800 | (o) | 150 |
| Bal. | 1,650 | | |

| Prepaid Rent | | | 162 |
|---|---|---|---|
| (b) | 1,200 | (p) | 400 |
| Bal. | 800 | | |

| Supplies | | | 173 |
|---|---|---|---|
| (q) | 350 | | |

| Truck | | | 184 |
|---|---|---|---|
| (c) | 10,000 | | |

| Accounts Payable | | | 210 |
|---|---|---|---|
| | | (c) | 10,000 |
| | | (d) | 1,000 |
| | | (n) | 100 |
| | | Bal. | 11,100 |

| Wages Payable | | | 237 |
|---|---|---|---|
| | | (s) | 1,500 |

| Unearned Revenue | | | 249 |
|---|---|---|---|
| | | (r) | 2,000 |

| Accum. Dep'n Truck | | | 194 |
|---|---|---|---|
| | | (t) | 208 |

| Share Capital | | | 320 |
|---|---|---|---|
| | | (a) | 5,000 |

| Repair Revenue | | | 450 |
|---|---|---|---|
| (r) | 2,000 | (f) | 4,500 |
| | | (g) | 800 |
| | | (j) | 6,500 |
| | | (m) | 2,000 |
| | | Bal. | 11,800 |

| Advertising Expense | | | 610 |
|---|---|---|---|
| (h) | 350 | | |
| (l) | 200 | | |
| Bal. | 550 | | |

| Depreciation Expense – Truck | | | 624 |
|---|---|---|---|
| (t) | 208 | | |

| Insurance Expense | | | 631 |
|---|---|---|---|
| (o) | 150 | | |

| Interest Expense | | | 632 |
|---|---|---|---|
| (h) | 100 | | |
| (l) | 150 | | |
| Bal. | 250 | | |

| Rent Expense | | | 654 |
|---|---|---|---|
| (p) | 400 | | |

| Supplies Expense | | | 668 |
|---|---|---|---|
| (d) | 1,000 | (q) | 350 |
| Bal. | 650 | | |

| Telephone Expense | | | 669 |
|---|---|---|---|
| (h) | 75 | | |

| Truck Operation Expense | | | 670 |
|---|---|---|---|
| (h) | 425 | | |
| (l) | 375 | | |
| Bal. | 800 | | |

| Utilities Expense | | | 676 |
|---|---|---|---|
| (n) | 100 | | |

| Wages Expense | | | 677 |
|---|---|---|---|
| (h) | 2,500 | | |
| (l) | 2,500 | | |
| (s) | 1,500 | | |
| Bal. | 6,500 | | |

2.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Cash | | 5,000 | |
| | Share Capital | | | 5,000 |
| | (a) | | | |
| | Prepaid Rent | | 1,200 | |
| | Cash | | | 1,200 |
| | (b) | | | |
| | Truck | | 10,000 | |
| | Accounts Payable | | | 10,000 |
| | (c) | | | |
| | Supplies Expense | | 1,000 | |
| | Accounts Payable | | | 1,000 |
| | (d) | | | |
| | Prepaid Insurance | | 1,800 | |
| | Cash | | | 1,800 |
| | (e) | | | |
| | Accounts Receivable | | 4,500 | |
| | Repair Revenue | | | 4,500 |
| | (f) | | | |
| | Cash | | 800 | |
| | Repair Revenue | | | 800 |
| | (g) | | | |
| | Advertising Expense | | 350 | |
| | Interest Expense | | 100 | |
| | Telephone Expense | | 75 | |
| | Truck Operation Expense | | 425 | |
| | Wages Expense | | 2,500 | |
| | Cash | | | 3,450 |
| | (h) | | | |
| | Cash | | 2,000 | |
| | Accounts Receivable | | | 2,000 |
| | (i) | | | |
| | Accounts Receivable | | 6,500 | |
| | Repair Revenue | | | 6,500 |
| | (j) | | | |
| | Advertising Expense | | 200 | |
| | Interest Expense | | 150 | |
| | Truck Operation Expense | | 375 | |
| | Wages Expense | | 2,500 | |
| | Cash | | | 3,225 |
| | (l) | | | |
| | Cash | | 2,000 | |
| | Repair Revenue | | | 2,000 |
| | (m) | | | |
| | Utilities Expense | | 100 | |
| | Accounts Payable | | | 100 |
| | (n) | | | |

5.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Insurance Expense | | 150 | |
| | Prepaid Insurance | | | 150 |
| | (o) | | | |
| | Rent Expense | | 400 | |
| | Prepaid Rent | | | 400 |
| | (p) | | | |
| | Supplies | | 350 | |
| | Supplies Expense | | | 350 |
| | (q) | | | |
| | Repair Revenue | | 2,000 | |
| | Unearned Revenue | | | 2,000 |
| | (r) | | | |
| | Wages Expense | | 1,500 | |
| | Wages Payable | | | 1,500 |
| | (s) | | | |
| | Depreciation Expense – Truck | | 208 | |
| | Accumulated Depreciation – Truck | | | 208 |
| | (t) $10,000/48 mos. = $208 per month* | | | |

**Recall that depreciation is always rounded to the nearest whole dollar because it is not 'exact'; depreciation is based on estimated useful life and estimated residual value.*

7.

Roth Contractors Corporation
Adjusted Trial Balance
December 31, 2023

| | *Account Balances* | |
|---|---|---|
| | *Debit* | *Credit* |
| Cash | $ 125 | |
| Accounts Receivable | 9,000 | |
| Prepaid Insurance | 1,650 | |
| Prepaid Rent | 800 | |
| Supplies | 350 | |
| Truck | 10,000 | |
| Accumulated Depreciation – Truck | | $ 208 |
| Accounts Payable | | 11,100 |
| Wages Payable | | 1,500 |
| Unearned Revenue | | 2,000 |
| Share Capital | | 5,000 |
| Repair Revenue | | 11,800 |
| Advertising Expense | 550 | |
| Depreciation Expense – Truck | 208 | |
| Insurance Expense | 150 | |
| Interest Expense | 250 | |
| Rent Expense | 400 | |
| Supplies Expense | 650 | |
| Telephone Expense | 75 | |
| Truck Expense | 800 | |
| Utilities Expense | 100 | |
| Wages Expense | 6,500 | |
| Totals | $31,608 | $31,608 |

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**PROBLEM 3–6**

1. The general journal is as follows:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Dec. 31 | Repair Revenue | | 11,800 | |
| | Income Summary | | | 11,800 |
| | To close revenue account to income summary. | | | |
| 31 | Income Summary | | 9,683 | |
| | Advertising Expense | | | 550 |
| | Depreciation Expense – Truck | | | 208 |
| | Insurance Expense | | | 150 |
| | Interest Expense | | | 250 |
| | Rent Expense | | | 400 |
| | Supplies Expense | | | 650 |
| | Telephone Expense | | | 75 |
| | Truck Expense | | | 800 |
| | Utilities Expense | | | 100 |
| | Wages Expense | | | 6,500 |
| | To close expense accounts to income summary. | | | |
| 31 | Income Summary | | 2,117 | |
| | Retained Earnings | | | 2,117 |
| | To close net income in income summary to retained earnings. | | | |

2. The post-closing trial balance is as follows:

Roth Contractors Corporation
Post-Closing Trial Balance
December 31, 2023

| | *Debits* | *Credits* |
|---|---|---|
| Cash | $ 125 | |
| Accounts receivable | 9,000 | |
| Prepaid insurance | 1,650 | |
| Prepaid rent | 800 | |
| Supplies | 350 | |
| Truck | 10,000 | |
| Accumulated depreciation – truck | | $ 208 |
| Accounts payable | | 11,100 |
| Wages payable | | 1,500 |
| Unearned revenue | | 2,000 |
| Share capital | | 5,000 |
| Retained earnings | | 2,117 |
| Totals | $21,925 | $21,925 |

**PROBLEM 3–7**

1., 3., 6., and 8.

Packer Corporation

**Cash** *101*

| | | | |
|---|---|---|---|
| | 12,000 | | |

**Accounts Receivable** *110*

| | | | |
|---|---|---|---|
| | 3,600 | | |

**Prepaid Insurance** *161*

| | | | |
|---|---|---|---|
| (a) | 900 | | |

**Supplies** *173*

| | | | |
|---|---|---|---|
| | 2,500 | | |
| (b) | 350 | | |
| Bal. | 2,850 | | |

**Land** *180*

| | | | |
|---|---|---|---|
| | 15,000 | | |

**Building** *181*

| | | | |
|---|---|---|---|
| | 60,000 | | |

**Furniture** *182*

| | | | |
|---|---|---|---|
| | 3,000 | | |

**Equipment** *183*

| | | | |
|---|---|---|---|
| | 20,000 | | |

**Accumulated Depreciation – Building** *191*

| | | | |
|---|---|---|---|
| | | (c) | 1,200 |

**Accumulated Depreciation – Furniture** *192*

| | | | |
|---|---|---|---|
| | | (d) | 300 |

**Accumulated Depreciation – Equipment** *193*

| | | | |
|---|---|---|---|
| | | (e) | 1,000 |

**Accounts Payable** *210*

| | | | |
|---|---|---|---|
| | | | 4,400 |

**Interest Payable** *222*

| | | | |
|---|---|---|---|
| | | (f) | 208 |

**Salaries Payable** *226*

| | | | |
|---|---|---|---|
| | | (i) | 325 |

**Unearned Commissions Revenue** *242*

| | | | |
|---|---|---|---|
| (g) | 750 | | 1,200 |
| | | Bal. | 450 |

**Unearned Subscriptions Revenue** *250*

| | | | |
|---|---|---|---|
| | | | 800 |
| | | (h) | 2,000 |
| | | Bal. | 2,800 |

**Bank Loan Long Term** *271*

| | | | |
|---|---|---|---|
| | | | 47,600 |

**Share Capital** *320*

| | | | |
|---|---|---|---|
| | | | 52,100 |

**Retained Earnings** *340*

| | | | |
|---|---|---|---|
| | | (l) | 6,967 |

**Income Summary** *360*

| | | | |
|---|---|---|---|
| (k) | 62,383 | (j) | 69,350 |
| (l) | 6,967 | | |
| | | Bal. | 0 |

**Commissions Earned** *410*

| | | | |
|---|---|---|---|
| | | | 37,900 |
| | | (g) | 750 |
| (j) | 38,650 | Bal. | 38,650 |
| | | Bal. | 0 |

**Subscription Revenue** *480*

| | | | |
|---|---|---|---|
| (h) | 2,000 | | 32,700 |
| | | Bal. | 30,700 |
| (j) | 30,700 | | |
| Bal. | 0 | | |

**Advertising Expense** *610*

| | | | |
|---|---|---|---|
| | 4,300 | (k) | 4,300 |
| Bal. | 0 | | |

**Depreciation Expense – Building** *621*

| | | | |
|---|---|---|---|
| (c) | 1,200 | (k) | 1,200 |
| Bal. | 0 | | |

**Depreciation Expense – Furniture** *622*

| | | | |
|---|---|---|---|
| (d) | 300 | (k) | 300 |
| Bal. | 0 | | |

**Depreciation Expense Equipment** *623*

| | | | |
|---|---|---|---|
| (e) | 1,000 | (k) | 1,000 |
| Bal. | 0 | | |

**Insurance Expense** *631*

| | | | |
|---|---|---|---|
| | 1,800 | (a) | 900 |
| Bal. | 900 | | |
| | | (k) | 900 |
| Bal. | 0 | | |

**Interest Expense** *632*

| | | | |
|---|---|---|---|
| | 2,365 | | |
| (f) | 208 | | |
| Bal. | 2,573 | | |
| | | (k) | 2,573 |
| Bal. | 0 | | |

**Salaries Expense** *656*

| | | | |
|---|---|---|---|
| | 33,475 | | |
| (i) | 325 | | |
| Bal. | 33,800 | | |
| | | (k) | 33,800 |
| Bal. | 0 | | |

**Supplies Expense** *668*

| | | | |
|---|---|---|---|
| | 15,800 | (b) | 350 |
| Bal. | 15,450 | | |
| | | (k) | 15,450 |
| Bal. | 0 | | |

**Utilities Expense** *676*

| | | | |
|---|---|---|---|
| | 2,860 | (k) | 2,860 |
| Bal. | 0 | | |

2. Adjusting entries:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Aug. 31 | Prepaid Insurance | | 900 | |
| | Insurance Expense | | | 900 |
| | (a) ($1,800 × 6/12 mos. = $900) | | | |
| 31 | Supplies | | 350 | |
| | Supplies Expense | | | 350 |
| | (b) | | | |
| 31 | Depreciation Expense – Building | | 1,200 | |
| | Accumulated Depreciation – Building | | | 1,200 |
| | (c) ($60,000 × 12/600 mos. = $1,200) | | | |
| 31 | Depreciation Expense – Furniture | | 300 | |
| | Accumulated Depreciation – Furniture | | | 300 |
| | (d) ($3,000 × 12/120 mos. = $300) | | | |
| 31 | Depreciation Expense – Equipment | | 1,000 | |
| | Accumulated Depreciation – Equipment | | | 1,000 |
| | (e) ($20,000 × 12/240 mos. = $1,000) | | | |
| 31 | Interest Expense | | 208 | |
| | Interest Payable | | | 208 |
| | (f) | | | |
| 31 | Unearned Commissions Revenue | | 750 | |
| | Commissions Earned | | | 750 |
| | (g) | | | |
| 31 | Subscription Revenue | | 2,000 | |
| | Unearned Subscriptions Revenue | | | 2,000 |
| | (h) | | | |
| 31 | Salaries Expense | | 325 | |
| | Salaries Payable | | | 325 |
| | (i) | | | |

4. The adjusted trial balance is as follows:

Packer Corporation
Adjusted Trial Balance
August 31, 2023

| | *Account Balances* | |
|---|---|---|
| | *Debit* | *Credit* |
| Cash | $ 12,000 | |
| Accounts Receivable | 3,600 | |
| Prepaid Insurance | 900 | |
| Supplies | 2,850 | |
| Land | 15,000 | |
| Building | 60,000 | |
| Furniture | 3,000 | |
| Equipment | 20,000 | |
| Accumulated Depreciation – Building | | $ 1,200 |
| Accumulated Depreciation – Furniture | | 300 |
| Accumulated Depreciation – Equipment | | 1,000 |
| Accounts Payable | | 4,400 |
| Interest Payable | | 208 |
| Salaries Payable | | 325 |
| Unearned Commissions Revenue | | 450 |
| Unearned Subscriptions Revenue | | 2,800 |
| Bank Loan- Long Term | | 47,600 |
| Share Capital | | 52,100 |
| Commissions Earned | | 38,650 |
| Subscription Revenue | | 30,700 |
| Advertising Expense | 4,300 | |
| Depreciation Expense – Building | 1,200 | |
| Depreciation Expense – Furniture | 300 | |
| Depreciation Expense – Equipment | 1,000 | |
| Insurance Expense | 900 | |
| Interest Expense | 2,573 | |
| Salaries Expense | 33,800 | |
| Supplies Expense | 15,450 | |
| Utilities Expense | 2,860 | |
| | $179,733 | $179,733 |

5. The income statement, statement of changes in equity, and balance sheet are as follows:

Packer Corporation
Income Statement
For the Year Ended August 31, 2023

| | | |
|---|---|---|
| *Revenue* | | |
| Commissions | $38,650 | |
| Subscriptions | 30,700 | |
| Total Revenue | | $69,350 |
| *Expenses* | | |
| Advertising | 4,300 | |
| Depreciation – Building | 1,200 | |
| Depreciation – Furniture | 300 | |
| Depreciation – Equipment | 1,000 | |
| Insurance | 900 | |
| Interest | 2,573 | |
| Salaries | 33,800 | |
| Supplies | 15,450 | |
| Utilities | 2,860 | |
| Total Expenses | | 62,383 |
| Net Income | | $ 6,967 |

Packer Corporation
Statement of Changes in Equity
For the Year Ended August 31, 2023

| | *Share Capital* | *Retained Earnings* | *Total Equity* |
|---|---|---|---|
| Opening Balance | $ -0- | $ -0- | $ -0- |
| Shares Issued | 52,100 | -0- | 52,100 |
| Net Income | -0- | 6,967 | 6,967 |
| Ending Balance | $52,100 | $6,967 | $59,067 |

Packer Corporation
Balance Sheet
At August 31, 2023

| | | |
|---|---|---|
| *Assets* | | |
| Cash | | $12,000 |
| Accounts Receivable | | 3,600 |
| Prepaid Insurance | | 900 |
| Supplies | | 2,850 |
| Land | | 15,000 |
| Buildings | $60,000 | |
| *Less*: Accum. Depreciation | 1,200 | 58,800 |
| Furniture | $3,000 | |
| *Less*: Accum. Depreciation | 300 | 2,700 |
| Equipment | $20,000 | |
| *Less*: Accum. Depreciation | 1,000 | 19,000 |
| Total Assets | | $114,850 |
| *Liabilities* | | |
| Accounts Payable | | $4,400 |
| Interest Payable | | 208 |
| Salaries Payable | | 325 |
| Unearned Commissions Revenue | | 450 |
| Unearned Subscriptions | | 2,800 |
| Bank Loan – Long-Term | | 47,600 |
| Total Liabilities | | 55,783 |
| *Equity* | | |
| Share Capital | $52,100 | |
| Retained Earnings | 6,967 | |
| Total Equity | | 59,067 |
| Total Liabilities and Equity | | $114,850 |

6. Closing entries:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Aug. 31 | Commissions Earned . . . . . | | 38,650 | |
| | Subscription Revenue . . . . . | | 30,700 | |
| | Income Summary . . . . . | | | 69,350 |
| | (j) | | | |
| 31 | Income Summary . . . . . | | 62,383 | |
| | Advertising Expense . . . . . | | | 4,300 |
| | Depreciation Expense – Building . . . . . | | | 1,200 |
| | Depreciation Expense – Furniture . . . . | | | 300 |
| | Depreciation Expense – Equipment . . . | | | 1,000 |
| | Insurance Expense . . . . . | | | 900 |
| | Interest Expense . . . . . | | | 2,573 |
| | Salaries Expense . . . . . | | | 33,800 |
| | Supplies Expense . . . . . | | | 15,450 |
| | Utilities Expense . . . . . | | | 2,860 |
| | (k) | | | |
| 31 | Income Summary . . . . . | | 6,967 | |
| | Retained Earnings . . . . . | | | 6,967 |
| | (l) | | | |

*Note: The closing entries were posted into the T-accounts as (j), (k), and (l).*

7. The post-closing trial balance:

Packer Corporation
Post-Closing Trial Balance
August 31, 2023

| | *Account Balances* | |
|---|---|---|
| | *Debit* | *Credit* |
| Cash | $ 12,000 | |
| Accounts Receivable | 3,600 | |
| Prepaid Insurance | 900 | |
| Unused Supplies | 2,850 | |
| Land | 15,000 | |
| Building | 60,000 | |
| Furniture | 3,000 | |
| Equipment | 20,000 | |
| Accumulated Depreciation – Building | | $ 1,200 |
| Accumulated Depreciation – Furniture | | 300 |
| Accumulated Depreciation – Equipment | | 1,000 |
| Accounts Payable | | 4,400 |
| Interest Payable | | 208 |
| Salaries Payable | | 325 |
| Unearned Commissions Revenue | | 450 |
| Unearned Subscriptions Revenue | | 2,800 |
| Bank Loan – Long-Term | | 47,600 |
| Share Capital | | 52,100 |
| Retained Earnings | | 6,967 |
| | $117,350 | $117,350 |

---

**PROBLEM 3–8**

1. a.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jun 30 | Accounts receivable . . . . . | | 45,000 | |
| | Service revenue . . . . . | | | 45,000 |

b.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jun 30 | Advertising expense . . . . . | | 500 | |
| | Prepaid advertising expense . . . . . | | | 500 |

c.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jun 30 | Shop supplies expense . . . . . | | 300 | |
| | Shop supplies . . . . . | | | 300 |
| | ($1,500 − $1,200) | | | |

d.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jun 30 | Depreciation expense . . . . . | | 79 | |
| | Accumulated depreciation, equipment | | | 79 |
| | ($10,000 − $500) ÷ 120 months | | | |

e.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jun 30 | Unearned service revenue . . . . . | | 5,000 | |
| | Service revenue . . . . . | | | 5,000 |

f.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jun 30 | Salaries expense . . . . . | | 5,800 | |
| | Accrued salaries payable . . . . . | | | 5,800 |

g.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jun 30 | Utilities expense . . . . . | | 3,500 | |
| | Accounts payable . . . . . | | | 3,500 |

h.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jun 30 | Cash . . . . . | | 7,800 | |
| | Accounts receivable . . . . . | | | 7,800 |

i.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jun 30 | Depreciation expense . . . . . | | 107 | |
| | Accumulated depreciation, building . . | | | 107 |
| | ($74,000 − $10,000) ÷ 600 months | | | |

j.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jun 30 | Prepaid rent expense . . . . . | | 5,000 | |
| | Rent expense . . . . . | | | 5,000 |

k.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jun 30 | Interest expense . . . . . | | 100 | |
| | Interest payable . . . . . | | | 100 |
| | ($20,000 × 6% × 1 ÷ 12) | | | |

l.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jun 30 | Income tax expense . . . . . | | 3,000 | |
| | Income taxes payable . . . . . | | | 3,000 |

m.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jun 30 | Accounts receivable . . . . . | | 9,000 | |
| | Service revenue . . . . . | | | 9,000 |

n.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jun 30 | Insurance expense . . . . . | | 75 | |
| | Prepaid insurance . . . . . | | | 75 |
| | ($1,800 × 1 ÷ 24) | | | |

o.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jun 30 | Insurance expense . . . . . | | 2,400 | |
| | Prepaid insurance . . . . . | | | 2,400 |
| | ($4,500 − $1,800) = $2,700 − $300 | | | |

2.

Quertin Quick Fix Ltd.
Trial Balance
At October 31, 2024

| | Unadjusted Trial Balance | | Adjustments | | Adjusted Trial Balance | |
|---|---|---|---|---|---|---|
| | Debit | Credit | Debit | Credit | Debit | Credit |
| Cash | $ 50,400 | | $ 7800 | | $ 58,200 | |
| Accounts receivable | 25,000 | | 45,000 | 7,800 | 71,200 | |
| | | | 9,000 | | | |
| Shop supplies | 1,500 | | | 300 | 1,200 | |
| Prepaid insurance expense | 4,500 | | | 75 | 2,025 | |
| | | | | 2,400 | | |
| Prepaid advertising expense | 2,000 | | | 500 | 1,500 | |
| Prepaid rent expense | – | | 5,000 | | 5,000 | |
| Building | 74,000 | | | | 74,000 | |
| Accumulated depreciation, building | | – | | 107 | | 107 |
| Equipment | 10,000 | | | | 10,000 | |
| Accumulated depreciation, equipment | | $ 2,000 | | 79 | | 2,079 |
| Accounts payable | | 12,000 | | 3,500 | | 15,500 |
| Accrued salaries payable | | – | | 5,800 | | 5,800 |
| Interest payable | | – | | 100 | | 100 |
| Income taxes payable | | – | | 3,000 | | 3,000 |
| Notes payable | | 20,000 | | | | 20,000 |
| Unearned service revenue | | 30,000 | 5,000 | | | 25,000 |
| Share capital | | 1,000 | | | | 1,000 |
| Retained earnings | | 40,400 | | | | 40,400 |
| Service revenue | | 125,000 | | 45,000 | | 184,000 |
| | | | | 5,000 | | |
| | | | | 9,000 | | |
| Salaries expense | 22,000 | | 5,800 | | 27,800 | |
| Insurance expense | – | | 75 | | 2,475 | |
| | | | 2,400 | | | |
| Interest expense | – | | 100 | | 100 | |
| Shop supplies expense | 200 | | 300 | | 500 | |
| Advertising expense | 2,200 | | 500 | | 2,700 | |
| Depreciation expense | 1,400 | | 79 | | 1,586 | |
| | | | 107 | | | |
| Maintenance service expenses | 5,200 | | | | 5,200 | |
| Rent expense | 20,000 | | | 5,000 | 15,000 | |
| Income tax expense | – | | 3,000 | | 3,000 | |
| Utilities expense | 12,000 | | 3,500 | | 15,500 | |
| | $230,400 | $230,400 | $87,661 | $87,661 | $296,986 | $296,986 |

**PROBLEM 3–9**

Smith and Smith Co.
Income Statement
For the Month Ended June 30, 2024

| | | |
|---|---|---|
| **Revenues** | | |
| Service revenue | | $184,000 |
| **Expenses** | | |
| Salaries expense | $27,800 | |
| Insurance expense | 2,475 | |
| Interest expense | 100 | |
| Shop supplies expense | 500 | |
| Advertising expense | 2,700 | |
| Depreciation expense | 1,586 | |
| Maintenance service expense | 5,200 | |
| Rent expense | 15,000 | |
| Income tax expense | 3,000 | |
| Utilities expense | 15,500 | 73,861 |
| Net loss | | $110,139 |

Smith and Smith Co.
Statement of Changes in Equity
For the Month Ended June 30, 2024

| | Share Capital | Retained Earnings | Total Equity |
|---|---|---|---|
| Opening balance, June 1, 2024 | $1,000 | $ 40,400 | $ 41,400 |
| Net income | | 110,139 | 110,139 |
| Ending balance | $1,000 | $150,539 | $151,539 |

Smith and Smith Co.
Balance Sheet
At June 30, 2024

| | | | | | |
|---|---|---|---|---|---|
| *Assets* | | | *Liabilities* | | |
| Cash | | $ 58,200 | Accounts payable | $ 15,500 | |
| Accounts receivable | | 71,200 | Accrued salaries | 5,800 | |
| Shop supplies | | 1,200 | Interest payable | 100 | |
| Prepaid insurance expense | | 2,025 | Income taxes payable | 3,000 | |
| Prepaid advertising expense | | 1,500 | Note payable | 20,000 | |
| Repaid rent expense | | 5,000 | Unearned consulting fees | 25,000 | |
| Building | 74,000 | | Total liabilities | | $ 69,400 |
| Accumulated depreciation, building | (107) | 73,893 | | | |
| Equipment | 10,000 | | *Equity* | | |
| Accumulated depreciation, equipment | (2,079) | 7,921 | Share capital | $ 1,000 | |
| | | | Retained earnings | 150,539 | |
| | | | Total equity | | |
| | | | Total liabilities and equity | | 151,539 |
| Total assets | | $220,939 | | | $220,939 |

---

**PROBLEM 3–10**

a. 1. Close revenue accounts to income summary account.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jun 30 | Services revenue . . . . . | | 184,000 | |
| | Income summary . . . . . | | | 184,000 |

2. Close expense accounts to income summary account.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jun 30 | Income summary . . . . . | | 73,861 | |
| | Salaries expense . . . . . | | | 27,800 |
| | Insurance expense . . . . . | | | 2,475 |
| | Interest expense . . . . . | | | 100 |
| | Shop supplies expense . . . . . | | | 500 |
| | Advertising expense . . . . . | | | 2,700 |
| | Depreciation expense . . . . . | | | 1,586 |
| | Maintenance service expenses . . . . . | | | 5,200 |
| | Rent expense . . . . . | | | 15,000 |
| | Income tax expense . . . . . | | | 3,000 |
| | Utilities expense . . . . . | | | 15,500 |

3. Close the income summary account to retained earnings.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jun 30 | Income summary . . . . . | | 110,139 | |
| | Retained earnings . . . . . | | | 110,139 |

4. Close dividends to retained earnings: No entry required.

b.

Smith and Smith Co.
Trial Balance
At June 30, 2024
Post-Closing Trial Balance

| | Debit | Credit |
|---|---|---|
| Cash | $ 58,200 | |
| Accounts receivable | 71,200 | |
| Shop supplies | 1,200 | |
| Prepaid insurance expense | 2,025 | |
| Prepaid advertising expense | 1,500 | |
| Prepaid rent expense | 5,000 | |
| Building | 74,000 | |
| Accumulated depreciation, building | | $ 107 |
| Equipment | 10,000 | |
| Accumulated depreciation, equipment | | 2,079 |
| Accounts payable | | 15,500 |
| Accrued salaries payable | | 5,800 |
| Interest payable | | 100 |
| Income taxes payable | | 3,000 |
| Notes payable | | 20,000 |
| Unearned service revenue | | 25,000 |
| Share capital | | 1,000 |
| Retained earnings | | 150,539 |
| | $223,125 | $223,125 |

## Chapter 4 Solutions

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**PROBLEM 4–1**

Norman Company Ltd.
Balance Sheet
At December 31, 2023

| | | |
|---|---|---|
| | *Assets* | |
| *Current* | | |
| Cash | $250 | |
| Accounts Receivable | 138 | |
| Notes Receivable | 18 | |
| Prepaid Insurance | 12 | |
| Unused Office Supplies | 70 | |
| Total Current Assets | | $488 |
| *Property, Plant, and Equipment* | | |
| Land | 115 | |
| Building | 400 | |
| Equipment | 140 | |
| Net Property, Plant, and Equipment | | 655 |
| Total Assets | | $1,143 |
| | *Liabilities* | |
| *Current* | | |
| Accounts Payable | $125 | |
| Bank Loan | 110 | |
| Salaries Payable | 14 | |
| Total Current Liabilities | | $249 |
| *Non-current* | | |
| Mortgage Payable | | 280 |
| Total Liabilities | | 529 |
| | *Equity* | |
| Share Capital | 400 | |
| Retained Earnings | 214 | |
| Total Equity | | 614 |
| Total Liabilities and Equity | | $1,143 |

---

**PROBLEM 4–2**

1. Calculation of net income:

| | |
|---|---|
| Revenue | $80,000 |
| Salaries Expense | (39,000) |
| Depreciation | (1,100) |
| Interest | (1,300) |
| Income Taxes | (2,300) |
| Advertising | (7,200) |
| Insurance | (1,200) |
| Utilities | (3,600) |
| Telephone | (1,100) |
| Rent | (17,950) |
| Net Income | $5,250 |

2. The statement of changes in equity is as follows:

Dark Edge Sports Inc.
Statement of Changes in Equity
For the Year Ended December 31, 2023

| | *Share Capital* | *Retained Earnings* | *Total Equity* |
|---|---|---|---|
| Opening Balance | $3,000 | $2,000 | $5,000 |
| Net Income | | 5,250 | 5,250 |
| Dividends | | (600) | (600) |
| Ending Balance | $3,000 | $6,650 | $9,650 |

3. The balance sheet is as follows:

Dark Edge Sports Inc.
Balance Sheet
At December 31, 2023

| | | | |
|---|---|---|---|
| | *Assets* | | |
| *Current* | | | |
| Cash | | | $1,500 |
| Accounts Receivable | | | 18,700 |
| Prepaid Expenses (1,300 + 600) | | | 1,900 |
| Total Current Assets | | | 22,100 |
| *Property, Plant, and Equipment* | Equipment | $12,500 | |
| Less: Accumulated Depreciation | | 2,000 | |
| Net Property, Plant, and Equipment | | | 10,500 |
| Total Assets | | | $32,600 |
| | *Liabilities* | | |
| *Current* | | | |
| Bank Loan* | | $10,000 | |
| Accounts Payable | | 8,350 | |
| Income Taxes Payable | | 4 ,600 | |
| Total Current Liabilities | | | $22,950 |
| *Equity* Share Capital | | 3,000 | |
| Retained Earnings | | 6,650 | |
| Total Equity | | | 9,650 |
| Total Liabilities and Equity | | | $32,600 |

**Alternately, with appropriate disclosure, "Borrowings"*

4. Amount by which total current liabilities exceed total current assets:

| | |
|---|---|
| Current Assets | $22,100 |
| Current Liabilities | 22,950 |
| Difference | $ 850 |

5. After the $5,000 bank loan is received, both current assets and current liabilities will increase by the same amount (Debit to Cash; credit to Bank Loan). The difference will remain $850.

6. The company appears to have negative working capital (current assets less current liabilities) with or without the loan. More information should be requested, such as why the loan is needed. If it will be used to purchase a non-current asset like more equipment, perhaps the loan repayment terms should be extended by several years in which case the loan would be classified as a long-term liability causing working capital to be positive instead of negative as a result of the loan.

**PROBLEM 4–3**

1. 1. Close revenue accounts to income summary account.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jun 30 | Revenue | | 135,000 | |
| | Income summary | | | 135,000 |

2. Close expense accounts to income summary account.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jun 30 | Income summary | | 155,092 | |
| | Advertising expense | | | 5,670 |
| | Depreciation expense | | | 3,332 |
| | Income tax expense | | | 6,300 |
| | Insurance expense | | | 5,180 |
| | Interest expense | | | 210 |
| | Rent expense | | | 31,500 |
| | Salaries expense | | | 58,380 |
| | Shop supplies expense | | | 1,050 |
| | Utilities expense | | | 32,550 |
| | Repairs expense | | | 10,920 |

3. Close the income summary account to retained earnings.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jun 30 | Retained earnings | | 20,092 | |
| | Income summary | | | 20,092 |

4. Close dividends to retained earnings.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jun 30 | Retained earnings | | 7,000 | |
| | Cash dividends | | | 7,000 |

2.

MayBee Services Ltd.
Balance Sheet
At June 30, 2024

| | | | | | | |
|---|---|---|---|---|---|---|
| *Assets* | | | | *Liabilities* | | |
| Cash | | | $122,220 | Accounts payable | | $ 32,550 |
| Accounts receivable | | | 149,520 | Accrued salaries payable | | 12,180 |
| Office supplies | | | 2,520 | Income taxes payable | | 6,300 |
| Prepaid insurance expense | | | 17,906 | Interest payable | | 210 |
| Total current assets | | | 292,166 | Current portion of long-term debt | | 14,000 |
| | | | | Unearned revenue | | 52,500 |
| *Property, Plant and Equipment* | | | | Total current liabilities | | 117,740 |
| Building | $145,400 | | | | | |
| Accumulated depreciation, building | (280) | $145,120 | | *Long-term Liabilities* | | |
| Equipment | 21,000 | | | Notes payable | | 28,000 |
| Accumulated depreciation, equipment | (4,480) | 16,520 | 161,640 | Total liabilities | | 145,740 |
| *Intangible assets* | | | | *Equity* | | |
| Trademark | | | 10,000 | Share capital | $ 2,100 | |
| | | | | Retained earnings | 315,966* | |
| | | | | Total equity | | 318,066 |
| Total assets | | | $463,806 | Total liabilities and equity | | $463,806 |

* Retained earnings $(\$343{,}058 - 7{,}000 - 20{,}092) = \$315{,}966$

3.

MayBee Services Ltd.
Post-closing Trial Balance
At June 30, 2024

| | Debit | Credit |
|---|---|---|
| Cash | $122,220 | |
| Accounts receivable | 149,520 | |
| Office supplies | 2,520 | |
| Prepaid insurance expense | 17,906 | |
| Building | 145,400 | |
| Accumulated depreciation, building | | $ 280 |
| Equipment | 21,000 | |
| Accumulated depreciation, equipment | | 4,480 |
| Trademark | 10,000 | |
| Accounts payable | | 32,550 |
| Accrued salaries payable | | 12,180 |
| Income taxes payable | | 6,300 |
| Interest payable | | 210 |
| Unearned revenue | | 52,500 |
| Notes payable* | | 42,000 |
| Share capital | | 2,100 |
| Retained earnings | | 315,966 |
| | $468,566 | $468,566 |

* The notes payable account is not separated into two accounts for current and long-term portions. The disclosure of the current and long-term portions is for reporting purposes only.

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**PROBLEM 4–4**

1.

2.

Jennette Ltd.
Adjusted Trial Balance
At September 30, 2024

| | Unadjusted Trial Balance | | Adjustments | | Adjusted Trial Balance | |
|---|---|---|---|---|---|---|
| | Debit | Credit | Debit | Credit | Debit | Credit |
| Accounts payable | | $ 39,983 | | | | $ 39,983 |
| Accounts receivable | $ 321,468 | | $20,000 | | $ 341,468 | |
| Accrued salaries payable | | 21,909 | | $ 2,500 | | 24,409 |
| Accumulated depreciation, building | | 9,632 | | 8,504 | | 18,136 |
| Accumulated depreciation, vehicle | | 602 | | 3,000 | | 3,602 |
| Advertising expense | 12,191 | | | | 12,191 | |
| Building | 312,610 | | | | 312,610 | |
| Cash | 262,773 | | | | 262,773 | |
| Cash dividends | 15,050 | | | | 15,050 | |
| Copyright | 21,500 | | | | 21,500 | |
| Depreciation expense | 7,164 | | 8,504 | | 18,668 | |
| | | | 3,000 | | | |
| Income tax expense | 13,545 | | | | 13,545 | |
| Income taxes payable | | 13,545 | | | | 13,545 |
| Insurance expense | 11,137 | | 4,249 | | 15,386 | |
| Interest expense | 452 | | | | 452 | |
| Interest payable | | 4,730 | | | | 4,730 |
| Mortgage payable, due 2027 | | 90,300 | | | | 90,300 |
| Office supplies | 5,418 | | | | 5,418 | |
| Prepaid insurance expense | 8,498 | | | 4,249 | 4,249 | |
| Prepaid rent expense | | | 5,150 | | 5,150 | |
| Rent expense | 67,725 | | | 5,150 | 62,575 | |
| Repairs expense | 23,478 | | | | 23,478 | |
| Retained earnings | | 737,575 | | | | 737,575 |
| Revenue | | 290,250 | | 20,000 | | 360,250 |
| | | | | 50,000 | | |
| Salaries expense | 155,517 | | 2,500 | | 158,017 | |
| Share capital | | 4,515 | | | | 4,515 |
| Shop supplies expense | 2,259 | | | | 2,259 | |
| Unearned revenue | | 112,875 | 50,000 | | | 62,875 |
| Utilities expense | 39,981 | | | | 39,981 | |
| Vehicle | 45,150 | | | | 45,150 | |
| | $1,325,916 | $1,325,916 | $93,403 | $93,403 | $1,359,920 | $1,359,920 |

3.

Jennette Ltd.
Balance Sheet
At September 30, 2024

| | | | | | | |
|---|---|---|---|---|---|---|
| *Assets* | | | | *Liabilities* | | |
| Cash | | | $262,773 | Accounts payable | | $ 39,983 |
| Accounts receivable | | | 341,468 | Accrued salaries payable | | 24,409 |
| Office supplies | | | 5,418 | Income taxes payable | | 13,545 |
| Prepaid insurance expense | | | 4,249 | Interest payable | | 4,730 |
| Prepaid rent expense | | | 5,150 | Current portion of long-term debt | | 30,000 |
| Total current assets | | | 619,058 | Unearned revenue | | 62,875 |
| | | | | Total current liabilities | | 175,542 |
| *Property, Plant and Equipment* | | | | | | |
| Building | $312,610 | | | *Long-term Liabilities* | | |
| Accumulated depreciation, building | (18,136) | $294,474 | | Notes payable | | 60,300 |
| Vehicle | 45,150 | | | Total liabilities | | 235,842 |
| Accumulated depreciation, vehicle | (3,602) | 41,548 | 336,022 | | | |
| | | | | *Equity* | | |
| *Intangible assets* | | | | Share capital | $ 4,515 | |
| Copyright | | | 21,500 | Retained earnings | 736,223* | |
| | | | | Total equity | | 740,738 |
| Total assets | | | $976,580 | Total liabilities and equity | | $976,580 |

Net income $(360{,}250 - 12{,}191 - 18{,}668 - 13{,}545 - 15{,}386 - 452 - 62{,}575 - 23{,}478 - 158{,}017 - 2{,}259 - 39{,}981) = 13{,}698$

* Retained earnings $(\$737{,}575 + 13{,}698 - 15{,}050) = 736{,}223$

# Chapter 5 Solutions

## PROBLEM 5–1

1. The Salem Corp. general journal is as follows:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jul. 2 | Cash | | 5,000 | |
| | Share Capital | | | 5,000 |
| | To record the issue of common shares. | | | |
| 2 | Merchandise Inventory | | 3,500 | |
| | Accounts Payable | | | 3,500 |
| | To record Purchases on credit 2/10, n/30, from Blic Pens, Ltd. | | | |
| 2 | Accounts Receivable | | 2,000 | |
| | Sales | | | 2,000 |
| | To record sale to Spellman Chair Rentals, Inc.; terms 2/10, n/30. | | | |
| | Cost of Goods Sold | | 1,200 | |
| | Merchandise Inventory | | | 1,200 |
| | To record the cost of sales. | | | |
| 3 | Rent Expense | | 500 | |
| | Cash | | | 500 |
| | To record July rent payment. | | | |
| 5 | Equipment | | 1,000 | |
| | Cash | | | 1,000 |
| | To record purchase of equipment. | | | |
| 8 | Cash | | 200 | |
| | Sales | | | 200 |
| | To record cash sale to Ethan Matthews Furniture Ltd. | | | |
| | Cost of Goods Sold | | 120 | |
| | Merchandise Inventory | | | 120 |
| | To record the cost of sales. | | | |
| 8 | Merchandise Inventory | | 2,000 | |
| | Accounts Payable | | | 2,000 |
| | To record purchase of merchandise inventory; terms 2/15, n/30, from Shaw Distributors, Inc. | | | |
| 9 | Cash | | 1,960 | |
| | Sales Discount | | 40 | |
| | Accounts Receivable | | | 2,000 |
| | To record receipt of amount due from Spellman Chair Rentals, Inc. less the discount. | | | |

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| 10 | Accounts Payable . . . . . | | 3,500 | |
| | Cash . . . . . | | | 3,430 |
| | Merchandise Inventory . . . . . | | | 70 |
| | To record payment to Blic Pens Ltd. less the discount. | | | |
| 10 | Merchandise Inventory . . . . . | | 200 | |
| | Accounts Payable . . . . . | | | 200 |
| | To record purchase of merchandise inventory from Peel Products, Inc.; terms n/30. | | | |
| Jul. 15 | Accounts Receivable . . . . . | | 2,000 | |
| | Sales . . . . . | | | 2,000 |
| | To record sale to Eagle Products Corp. 2/10, n/30. | | | |
| | Cost of Goods Sold . . . . . | | 1,300 | |
| | Merchandise Inventory . . . . . | | | 1,300 |
| | To record the cost of sales. | | | |
| 15 | Merchandise Inventory . . . . . | | 1,500 | |
| | Accounts Payable . . . . . | | | 1,500 |
| | To record purchase of merchandise inventory from Bevan Door, Inc.; terms 2/10, n/30. | | | |
| 15 | Accounts Payable . . . . . | | 100 | |
| | Merchandise Inventory . . . . . | | | 100 |
| | To record credit memo from Shaw Distributors, Inc. | | | |
| 16 | Sales Returns and Allowances . . . . . | | 200 | |
| | Accounts Receivable . . . . . | | | 200 |
| | To record return of defective items sold to Eagle Products Corp.; inventory scrapped. | | | |
| 20 | Accounts Receivable . . . . . | | 3,500 | |
| | Sales . . . . . | | | 3,500 |
| | To record sale to Aspen Promotions, Ltd. 2/10, n/30. | | | |
| | Cost of Goods Sold . . . . . | | 2,700 | |
| | Merchandise Inventory . . . . . | | | 2,700 |
| | To record the cost of sales. | | | |
| 20 | Accounts Payable . . . . . | | 950 | |
| | Cash . . . . . | | | 931 |
| | Merchandise Inventory . . . . . | | | 19 |
| | To record payment of half of the amount due to Shaw Distributors, Inc. less memo and less discount. | | | |

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| 24 | Cash | | 882 | |
| | Sales Discounts | | 18 | |
| | Accounts Receivable | | | 900 |
| | To record receipt of half of the amount due from Eagle Products Corp.; 2,000 − 200 return = 1,800/2 = 900. | | | |
| 24 | Accounts Payable | | 1,500 | |
| | Cash | | | 1,470 |
| | Merchandise Inventory | | | 30 |
| | To record payment made to Bevan Door, Inc. less discount. | | | |
| 26 | Accounts Receivable | | 600 | |
| | Sales | | | 600 |
| | To record sale to Longbeach Sales, Ltd. for terms 2/10, n/30. | | | |
| | Cost of Goods Sold | | 400 | |
| | Merchandise Inventory | | | 400 |
| | To record the cost of sales. | | | |
| Jul. 26 | Merchandise Inventory | | 800 | |
| | Accounts Payable | | | 800 |
| | To record purchase from Silverman Co. for terms 2/10, n/30. | | | |
| 31 | Merchandise Inventory | | 350 | |
| | Cash | | | 350 |
| | To record payment to Speedy Transport Co. for July transport of inventory to warehouse. | | | |

2. The unadjusted ending balance in merchandise inventory is as follows:

| Merchandise Inventory | | | |
|---|---|---|---|
| 2-Jul | 3,500 | 1,200 | 2-Jul |
| 8-Jul | 2,000 | 120 | 8-Jul |
| 10-Jul | 200 | 70 | 10-Jul |
| 15-Jul | 1,500 | 1,300 | 15-Jul |
| 26-Jul | 800 | 100 | 15-Jul |
| 31-Jul | 350 | 2,700 | 20-Jul |
| | | 19 | 20-Jul |
| | | 30 | 24-Jul |
| | | 400 | 26-Jul |
| Unadj. Bal. | 2,411 | | |

3. The general journal entry is as follows:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| July 31 | Cost of Goods Sold . . . . . | | 11 | |
| | Merchandise Inventory . . . . . | | | 11 |
| | To record adjustment to merchandise inventory calculated as $2,411 − $2,400 = $11. | | | |

---

**PROBLEM 5–2**

| | |
|---|---|
| Sales | $37,800 |
| *Less*: Sales Returns and Allowances | 690 |
| Sales Discounts | 310 |
| Net Sales | $36,800 |
| Cost of Goods Sold | 26,800 |
| Gross Profit | $10,000 |

---

**PROBLEM 5–3**

1. The income statement and statement of changes in equity are as follows:

Acme Automotive Inc.
Income Statement
Year Ended December 31, 2023

| | | | |
|---|---|---|---|
| Sales | | | $310,000 |
| *Less*: Sales returns and allowances | | $2,900 | |
| Sales discounts | | 1,300 | 4,200 |
| Net sales | | | $305,800 |
| Cost of goods sold | | | 126,000 |
| Gross profit | | | $179,800 |
| Operating expenses: | | | |
| Selling expenses: | | | |
| Advertising expense | $14,000 | | |
| Commissions expense | 29,000 | | |
| Delivery expense | 14,800 | | |
| Rent expense | 19,440 | | |
| Sales salaries expense | 26,400 | | |
| Total selling expenses | | $103,640 | |
| General and administrative expenses: | | | |
| Depreciation expense | $12,000 | | |
| Insurance expense | 10,400 | | |
| Office supplies expense | 3,100 | | |
| Rent expense | 12,960 | | |
| Telephone expense | 1,800 | | |
| Utilities expense | 4,200 | | |
| Wages expense – office | 14,300 | | |
| Total general and administrative expenses | | 58,760 | |
| Total operating expenses | | | 162,400 |
| Income from operations | | | $17,400 |
| Other revenues and expenses: | | | |
| Rent revenue | | $19,200 | |
| Interest expense | | (840) | 18,360 |
| Income before tax | | | $35,760 |
| Income tax expense | | | 4,200 |
| Net income | | | $31,560 |

Acme Automotive Inc.
Statement of Changes in Equity
Year Ended December 31, 2023

| | *Share Capital* | *Retained Earnings* | *Total Equity* |
|---|---|---|---|
| Opening balance | $50,000 | $12,440 | $62,440 |
| Shares issued | 20,000 | | 20,000 |
| Net income | | 31,560 | 31,560 |
| Dividends | | (11,000) | (11,000) |
| Ending balance | $70,000 | $33,000 | $103,000 |

2. Closing entries:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Dec. 31 | Sales | | 310,000 | |
| | Rent Sales | | 19,200 | |
| | Income Summary | | | 329,200 |
| | (to close credit balance temporary accounts) | | | |
| 31 | Income Summary | | 297,640 | |
| | Sales Returns and Allowances | | | 2,900 |
| | Sales Discounts | | | 1,300 |
| | Cost of Goods Sold | | | 126,000 |
| | Advertising Expense | | | 14,000 |
| | Commissions Expense | | | 29,000 |
| | Delivery Expense | | | 14,800 |
| | Rent Expense | | | 32,400 |
| | Sales Salaries Expense | | | 26,400 |
| | Depreciation Expense | | | 12,000 |
| | Insurance Expense | | | 10,400 |
| | Office Supplies Expense | | | 3,100 |
| | Telephone Expense | | | 1,800 |
| | Utilities Expense | | | 4,200 |
| | Wages Expense – Office | | | 14,300 |
| | Interest Expense | | | 840 |
| | Income Tax Expense | | | 4,200 |
| | (to close debit balance temporary accounts) | | | |
| 31 | Income Summary | | 31,560 | |
| | Retained Earnings | | | 31,560 |
| | (to close Income Summary to Retained Earnings) | | | |
| 31 | Retained Earnings | | 11,000 | |
| | Dividends | | | 11,000 |
| | (to close Dividends to Retained Earnings) | | | |

**PROBLEM 5–4**

Answers for the missing boxes are in the colored cells.

| | | | |
|---|---|---|---|
| Inventory, opening balance | | | 55,000 |
| Plus: purchases | | 250,000 | |
| Plus: sales returns to inventory | 100 | | |
| Plus: purchase shipping costs | 500 | | |
| Less: Purchase returns and allowances | 200 | | |
| Less: Purchase discounts | 3,500 | 3,100 | |
| Net purchases | | | 246,900 |
| | | | |
| Total goods available for sale | | | 301,900 |
| Ending inventory, per GL | 90,000 | | |
| Less shrinkage adjustment (90,000 − 88,500) | 1,500 | | 88,500 |
| Cost of goods sold | | | 213,400 |
| | | | |
| Sales | | 580,000 | |
| Less: sales discounts | 200 | | |
| Less: sales returns | 200 | | |
| Less: sales allowances | 600 | 1,000 | |
| Net sales | | | 579,000 |
| | | | |
| Gross profit | | | 365,600 |
| Less: operating expenses | | | 250,000 |
| Net income/(loss) | | | 115,600 |
| Gross profit/sales (%) (365,600 ÷ 579,000) | | | 63.14% |

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**PROBLEM 5–5**

1.

Turret Retail Ltd.
Income Statement
For the Year Ended December 31, 2023

| | | |
|---|---|---|
| Sales | | $360,000 |
| Less: Sales discounts | $ 3,600 | |
| Sales returns and allowances | 9,600 | 13,200 |
| Net sales | | 346,800 |
| Cost of goods sold | | 240,000 |
| Gross profit from sales | | 106,800 |
| | | |
| Operating expenses | | |
| Salaries expense | 57,000 | |
| Insurance expense | 5,000 | |
| Shop supplies expense | 1,000 | |
| Depreciation expense | 3,200 | |
| Rent expense | 30,240 | |
| Travel expense | 2,100 | |
| Utilities expense | 7,300 | |
| Total operating expenses | | 105,840 |
| Income from operations | | 960 |
| Other revenue and expenses | | |
| Rental income | 6000 | |
| Interest expense | 200 | 5,800 |
| Income before tax | | 6,760 |
| Income tax expense | | 2,028 |
| Net income | | $ 4,732 |

2.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Dec 31 | Rental income | | 6,000 | |
| | Sales | | 360,000 | |
| | Income summary | | | 366,000 |
| | To close temporary revenue accounts. | | | |
| Dec 31 | Income summary | | 108,068 | |
| | Salaries expense | | | 57,000 |
| | Insurance expense | | | 5,000 |
| | Shop supplies expense | | | 1,000 |
| | Depreciation expense | | | 3,200 |
| | Rent expense | | | 30,240 |
| | Travel expense | | | 2,100 |
| | Utilities expense | | | 7,300 |
| | Interest expense | | | 200 |
| | Income tax expense | | | 2,028 |
| | To close temporary expense accounts. | | | |
| Dec 31 | Income Summary | | 4,732 | |
| | Retained earnings | | | 4,732 |
| | To close income summary to retained earnings. | | | |
| Dec 31 | Retained earnings | | 10,000 | |
| | Cash dividends | | | 10,000 |
| | To close temporary cash dividend account. | | | |

3. Gross profit ratio = gross profit/Net sales = $106,800 ÷ 346,800 = 30.8%

   This ratio means that for every $100 of sales, the company has $30.8 left to cover operating expenses after deducting cost of goods sold. This ratio can be compared to other companies in the same industry or to historical trends within the same company. A small fluctuation in the ratio can often cause a large increase/decrease in gross profit, if inventory and sales dollar amounts are often the largest amounts reported on the income statement.

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**PROBLEM 5–6**

1.

Yuba Yabi Enterprises Ltd.
Trial Balance
March 31, 2023

| | Unadjusted Trial Balance | | Adjustments | | Adjusted Trial Balance | |
|---|---|---|---|---|---|---|
| | Debit | Credit | Debit | Credit | Debit | Credit |
| Accounts payable | | $ 68,750 | | | | $ 68,750 |
| Accounts receivable | $ 308,000 | | | | $ 308,000 | |
| Accrued salaries and benefits payable | | 26,400 | | $ 12,000 | | 38,400 |
| Accumulated depreciation, furniture | | 9,460 | | | | 9,460 |
| Cash | 46,200 | | | | 46,200 | |
| Cash dividends | 22,000 | | | | 22,000 | |
| Cost of goods sold | 528,000 | | $ 7,800 | | 535,800 | |
| Advertising expense | 9,900 | | | | 9,900 | |
| Bank loan payable (long-term) | | 88,704 | | | | 88,704 |
| Depreciation expense | 7,040 | | | | 7,040 | |
| Copyright | 44,000 | | | | 44,000 | |
| Franchise | 66,000 | | | | 66,000 | |
| Furniture | 44,000 | | | | 44,000 | |
| Income tax expense | – | | 149,872* | | 229,481 | |
| Income taxes payable | | 17,600 | | 149,872* | | 247,081 |
| Insurance expense | 11,000 | | 5,000 | | 16,000 | |
| Interest expense | 440 | | 5,600 | | 6,040 | |
| Interest payable | | 1,210 | | 5,600 | | 6,810 |
| Land | 308,000 | | | | 308,000 | |
| Merchandise inventory | 264,000 | | | 7,800 | 256,200 | |
| Prepaid insurance expense | 13,200 | | | 5,000 | 8,200 | |
| Prepaid advertising expense | 8,800 | | | | 8,800 | |
| Rent expense | 66,528 | | | | 66,528 | |
| Rental income | | 13,200 | | | | 13,200 |
| Retained earnings | | 265,364 | | | | 265,364 |
| Salaries expense | 125,400 | | 12,000 | | 137,400 | |
| Sales | | 792,000 | | | | 792,000 |
| Sales discounts | 7,920 | | | | 7,920 | |
| Sales returns and allowances | 21,120 | | | | 21,120 | |
| Service revenue | | 495,000 | | 30,000 | | 525,000 |
| Share capital | | 44,000 | | | | 44,000 |
| Shop supplies | 8,360 | | | | 8,360 | |
| Shop supplies expense | 2,200 | | | | 2,200 | |
| Travel expense | 4,620 | | | | 4,620 | |
| Unearned service revenue | | 111,100 | 30,000 | | | 81,100 |
| Utilities expense | 16,060 | | | | 16,060 | |
| | $1,932,788 | $1,932,788 | $ 210,272 | $ 210,272 | $2,179,869 | $2,179,869 |

* Income tax expense calculation:

| | | | |
|---|---|---|---|
| Cost of goods sold | $535,800 | | |
| Advertising expense | 9,900 | | |
| Depreciation expense | 7,040 | | |
| Insurance expense | 16,000 | | |
| Interest expense | 6,040 | | |
| Rent expense | 66,528 | | |
| Rental income | | $ 13,200 | |
| Salaries expense | 137,400 | | |
| Sales | | 792,000 | |
| Sales discounts | 7,920 | | |
| Sales returns and allowances | 21,120 | | |
| Service revenue | | 525,000 | |
| Shop supplies expense | 2,200 | | |
| Travel expense | 4,620 | | |
| Utilities expense | 16,060 | | |
| | $830,628 | $1,330,200 | |
| | | | |
| Net income before taxes | | 499,572 | |
| Income taxes @ 30% | | $ 149,872 | adjusting entry |

2.

Turret Retail Ltd.
Income Statement
For the Year Ended December 31, 2023

| | | |
|---|---|---|
| Sales | | $792,000 |
| Less: Sales discounts | $ 7,920 | |
| Sales returns and allowances | 21,120 | 29,040 |
| Net sales | | 762,960 |
| Cost of goods sold | | 535,800 |
| Gross profit from sales | | 227,160 |
| Service revenue | | 525,000 |
| | | 752,160 |
| Operating expenses | | |
| Salaries expense | 137,400 | |
| Insurance expense | 16,000 | |
| Advertising expense | 9,900 | |
| Shop supplies expense | 2,200 | |
| Depreciation expense | 7,040 | |
| Rent expense | 66,528 | |
| Travel expense | 4,620 | |
| Utilities expense | 16,060 | |
| Total operating expenses | | 259,748 |
| Income from operations | | 492,412 |
| Other revenue and expenses | | |
| Rental income | 13,200 | |
| Interest expense | 6,040 | 7,160 |
| Income before tax | | 499,572 |
| Income tax expense | | 149,872 |
| Net income | | $349,700 |

# Chapter 6 Solutions

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**PROBLEM 6–1**

1. Weighted Average Cost Flow Assumption:

*Product A*

| | | *Purchased (Sold)* | | | | *Balance* | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| *Date* | | *Units* | | *Unit Cost* | *COGS* | *Units* | | *Unit Cost* | | *Total Cost* |
| Jan. 1 | Opening Inventory | | | | | 4,000 | × | $11.90 | = | $47,600 |
| Jan. 7 | Purchase #1 | 8,000 | × | $12.00 | | 12,000 | × | 11.97[1] | = | 143,600 |
| Mar. 30 | Sale #1 | (9,000) | × | 11.97 | = ($107,730) | 3,000 | × | | = | 35,870 |
| May 10 | Purchase #2 | 12,000 | × | 12.10 | | 15,000 | × | 12.07[2] | = | 181,070 |
| Jul. 4 | Sale #2 | (14,000) | × | 12.07 | = (168,980) | 1,000 | × | | = | **$12,090** |

[1] [$47,600 + (8,000 × $12)]/(4,000 + 8,000) = $11.97/unit (rounded)

[2] [$35,870 + (12,000 × $12.10)]/(3,000 + 12,000) = $12.07/unit (rounded)

*Product B*

| | | *Purchased (Sold)* | | | | *Balance* | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| *Date* | | *Units* | | *Unit Cost* | *COGS* | *Units* | | *Unit Cost* | | *Total Cost* |
| Jan. 1 | Opening Inventory | | | | | 2,000 | × | $13.26 | = | $26,520 |
| Jan. 13 | Purchase #1 | 5,000 | × | $13.81 | | 7,000 | × | 13.65[3] | = | 95,570 |
| Jul. 15 | Sale #1 | (1,000) | × | 13.65 | = ($13,650) | 6,000 | × | | = | 81,920 |
| May 10 | Purchase #2 | 7,000 | × | 14.21 | | 13,000 | × | 13.95[4] | = | 181,390 |
| Dec. 14 | Sale #2 | (8,000) | × | 13.95 | = (111,600) | 5,000 | × | | = | **$69,790** |

[3] [$26,520 + (5,000 × $13.81)]/(2,000 + 5,000) = $13.65/unit (rounded)

[4] [$81,920 + (7,000 × $14.21)]/(6,000 + 7,000) = $13.95/unit (rounded)

2. Total ending inventory at December 31, 2023:

| | |
|---|---|
| Product A | $12,090 |
| Product B | 69,790 |
| Total | $81,880 |

3. Gross profit percentage earned:

| | *Product A* | | *Product B* |
|---|---|---|---|
| Mar. 30 Sale | 144,000 | Jul. 15 Sale | 20,000 |
| Jul. 04 Sale | 238,000 | Dec. 14 Sale | 168,000 |
| Total Sales | 382,000 | Total Sales | 188,000 |
| | | | |
| COGS | 276,710 | COGS | 125,250 |
| Gross Profit | 105,290 | Gross Profit | 62,750 |
| Gross Profit % | 27.56 | Gross Profit % | 33.38 |

## PROBLEM 6–2

1. Inventory Record – FIFO

| Date | Description | Purchases/Shipping costs/ Purchase returns, discounts and allowances | | | Cost of Goods Sold/ Returns to Inventory | | | Balance in Inventory | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Units | Cost/Unit | Total | Units | Cost/Unit | Total | Units | Cost/Unit | Total |
| Jan 1 | Inventory, opening | | | | | | | 500 | $ 10 | 5,000 |
| 4 | Sale of 100 units @ $20 | | | | 100 | $ 10 | 1,000 | 400 | $ 10 | 4,000 |
| | | | | | | | | 400 | $ 10 | 4,000 |
| 6 | Purchase | 200 | $ 11 | 2,200 | | | | 200 | $ 11 | 2,200 |
| | | | | | | | | 400 | $ 10 | 4,000 |
| 8 | Purchase return (from Jan 6 purchase) | (10) | $ 11 | (110) | | | | 190 | $ 11 | 2,090 |
| 9 | Sale of 200 unit @ $22 | | | | 200 | $ 10 | 2,000 | 200 | $ 10 | 2,000 |
| | | | | | | | | 190 | $ 11 | 2,090 |
| 10 | Sales return from customer from Jan 4 sale | | | | (15) | $10 | (150) | 215 | $ 10 | 2,150 |
| | (returned to inventory) | | | | | | | 190 | $ 11 | 2,090 |
| 15 | Sale of 150 units @ $23 | | | | 150 | $ 10 | 1,500 | 65 | $ 10 | 650 |
| | | | | | | | | 190 | $ 11 | 2,090 |
| | | | | | | | | 65 | $ 10 | 650 |
| | | | | | | | | 190 | $ 11 | 2,090 |
| 17 | Purchase | 300 | $ 9 | 2,700 | | | | 300 | $ 9 | 2,700 |
| 19 | Sales return from customer from Jan 15 sale | | | | | no entry | | 65 | $ 10 | 650 |
| | (beyond repair, disposed) | | | | | disposed | | 190 | $ 11 | 2,090 |
| | | | | | | | | 300 | $ 9 | 2,700 |
| 20 | Sale of 400 units @ $21 | | | | 65 | $ 10 | 650 | 0 | $ 10 | – |
| | | | | | 190 | $ 11 | 2,090 | 0 | $ 11 | – |
| | | | | | 145 | $ 9 | 1,305 | 155 | $ 9 | 1,395 |
| | Total | | | | 835 | | 8,395 | 155 | $ 9 | 1,395 |

2. Sales:

| | | |
|---|---|---|
| Sale of 100 units @ $20 | $ | 2,000.00 |
| Sale of 200 unit @ $22 | $ | 4,400.00 |
| Sales return of 15 units @ $20 | $ | (300.00) |
| Sale of 150 units @ $23 | $ | 3,450.00 |
| Sales return of 2 units @ $20 | $ | (40.00) |
| Sale of 400 units @ $21 | $ | 8,400.00 |
| Total sales | $ | 17,910.00 |
| Cost of goods sold | $ | 8,395.00 |
| Gross profit | $ | 9,515.00 |
| Gross profit % | | 53.13% |

3. Ending inventory balance, Jan 20, 2023: $1,395.00

---

**PROBLEM 6–3**

1. Weighted Average Cost

| | | Purchases/Shipping costs/ Purchase returns, discounts and allowances | | | Cost of Goods Sold/ Returns to Inventory | | | Balance in Inventory | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Date | Description | Units | Cost/Unit | Total | Units | Cost/Unit | Total | Units | Cost/Unit | Total |
| Feb 1 | Opening inventory | | | | | | | 75 | $ 12.00 | 900 |
| 5 | Sale | | | | 70 | $12.00 | 840 | 5 | $ 12.00 | 60 |
| 7 | Purchase | 300 | $ 11.00 | 3,300 | | | | 305 | $ 11.02 | 3,360 |
| 12 | Sale | | | | 180 | $11.02 | 1,984 | 125 | $ 11.01 | 1,376 |
| 14 | Purchase return from Feb 7 | (10) | $ 11.00 | (110) | | | | 115 | $ 11.01 | 1,266 |
| 17 | Sale | | | | 100 | $11.01 | 1,101 | 15 | $ 11.00 | 165 |
| 19 | Purchase | 400 | $ 9.00 | 3,600 | | | | 415 | $ 9.07 | 3,765 |
| 23 | Sale | | | | 80 | $ 9.07 | 726 | 335 | $ 9.07 | 3,039 |
| | Total | | | | 430 | | 4,651 | 335 | $ 9.07 | 3,039 |

2. Sales:

| | | |
|---|---|---|
| 430 units × $24 | $ | 10,320 |
| Cost of goods sold | $ | 4,651 |
| Gross profit | $ | 5,669 |
| Gross profit % | | 54.93% |

3. Ending inventory balance, Jan 20, 2023: $1,395

**PROBLEM 6–4**

**2022**

If ending inventory was overstated by $45,000, then COGS is understated causing net income to be overstated. This will cause equity to also be overstated.

| | COGS | Net Income | Total Assets | Equity |
|---|---|---|---|---|
| Unadjusted balance | $ 500,000 | $ 250,000 | $ 1,500,000 | $ 1,400,000 |
| Correction | 45,000 | (45,000) | (45,000) | (45,000) |
| Corrected balance | $ 545,000 | $ 205,000 | $ 1,455,000 | $ 1,355,000 |

**2023**

If ending inventory was overstated by $45,000 in 2022, then opening inventory will also be overstated in 2023. This will cause COGS to be overstated in 2023 causing net income to be understated. Since equity was overstated in 2022, this overstatement for 2023 will cancel out the previous year's error and equity will no longer contain any errors.

| | COGS | Net Income | Total Assets | Equity |
|---|---|---|---|---|
| Unadjusted balance | $ 660,000 | $ 350,000 | $ 1,400,000 | $ 1,300,000 |
| Correction | (45,000) | 45,000 | 0 | 0 |
| Corrected balance | $ 615,000 | $ 395,000 | $ 1,400,000 | $ 1,300,000 |

**PROBLEM 6–5**

**2022**

If ending inventory was understated by $30,000, then COGS is overstated causing net income to be understated. This will cause equity and total assets to also be understated.

| | COGS | Net Income | Total Assets | Equity |
|---|---|---|---|---|
| Unadjusted balance | $ 500,000 | $ 250,000 | $ 1,500,000 | $ 1,400,000 |
| Correction | (30,000) | 30,000 | 30,000 | 30,000 |
| Corrected balance | $ 470,000 | $ 280,000 | $ 1,530,000 | $ 1,430,000 |

**2023**

If ending inventory was understated by $30,000 in 2022, then opening inventory will also be understated in 2023. This will cause COGS to be understated in 2023 causing net income to be overstated. Since equity was overstated in 2022, this understatement for 2023 will cancel out the previous year's error and equity will no longer contain any errors. There are no errors in the ending inventory for 2023, so there are no mis-statements for assets.

| | COGS | Net Income | Total Assets | Equity |
|---|---|---|---|---|
| Unadjusted balance | $ 660,000 | $ 350,000 | $ 1,400,000 | $ 1,300,000 |
| Correction | 30,000 | (30,000) | 0 | 0 |
| Corrected balance | $ 690,000 | $ 320,000 | $ 1,400,000 | $ 1,300,000 |

---

**PROBLEM 6–6**

1.

2.

| Ceramic Wall Tiles: | # of Units | Cost/Unit | NRV/Unit | Total Cost | Total NRV | LCNRV by Group | LCNRV by Product |
|---|---|---|---|---|---|---|---|
| White | 1,025 | $ 5.00 | $ 6.00 | $ 5,125.00 | $ 6,150.00 | | 5,125 |
| Black | 875 | 4.50 | 4.25 | 3,937.50 | 3,718.75 | | 3,719 |
| Slate | 645 | 7.00 | 7.11 | 4,515.00 | 4,585.95 | | 4,515 |
| Beige | 325 | 2.00 | 2.25 | 650.00 | 731.25 | | 650 |
| | | | | 14,227.50 | 15,185.95 | $ 14,228 | |
| Marble Flooring: | | | | | | | |
| Cordoba | 10,000 | 9.25 | 9.35 | 92,500.00 | 93,500.00 | | 92,500 |
| Carrerra | 12,000 | 10.50 | 10.50 | 126,000.00 | 126,000.00 | | 126,000 |
| Maricha | 8,000 | 11.50 | 11.45 | 92,000.00 | 91,600.00 | | 91,600 |
| | | | | 310,500.00 | 311,100.00 | 310,500 | |
| Shower Waterproofing: | | | | | | | |
| Novo | 10,035 | 9.85 | 9.50 | 98,844.75 | 95,332.50 | | 95,333 |
| Deetra | 15,000 | 6.75 | 7.15 | 101,250.00 | 107,250.00 | | 101,250 |
| | | | | 200,094.75 | 202,582.50 | 200,095 | |
| Totals | | | | $ 524,822.25 | | $ 524,822 | $ 520,692 |

3. No entry required by group.

   By individual product:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Cost of goods sold . . . . . | | 4,130 | |
| | Merchandise inventory . . . . . | | | 4,130 |
| | ($524,822 − 520,692) | | | |

**PROBLEM 6–7**

1.

| | | |
|---|---|---|
| Goods available for sale: | | |
| Inventory, opening balance | | $ 420,364 |
| Purchases | 1,323,280 | |
| Purchase returns | (18,270) | |
| Transportation-in | 9,660 | 1,314,670 |
| Goods available for sale: | | $1,735,034 |
| Sales | 1,667,610 | |
| Sales returns | (13,230) | |
| Net sales | 1,654,380 | |
| Estimated COGS | | |
| ($1,654,380 $\times$ (1 $-$ 34%)) | | (1,091,891) |
| Estimated March 31, 2024 inventory | | $ 643,143 |

2.

Varane Ltd.
Income Statement
for the First Quarter ending March 31, 2024

| | | |
|---|---|---|
| Sales | $ 1,667,610 | |
| Less: Sales returns and allowances | 13,230 | |
| Net sales | 1,654,380 | |
| Cost of goods sold | 1,091,891 | |
| Gross profit from sales | 562,489 | 34% |
| Operating expenses | | |
| Total operating expenses | 130,500 | |
| Income before tax | 431,989 | |
| Income tax expense | 129,597 | |
| Net income | $ 302,392 | |

**PROBLEM 6–8**

1.

| | | At Cost | At Retail |
|---|---|---|---|
| Goods available for sale: | | | |
| Inventory, opening balance | | $ 659,890 | $ 1,298,010 |
| Purchases | | 4,660,362 | 8,958,180 |
| Purchase returns | | (73,920) | (167,090) |
| Goods available for sale: | | $ 5,246,332 | $ 10,089,100 |
| Sales | $ 7,693,980 | | |
| Sales returns | (62,440) | | $ 7,631,540 |
| Ending inventory at retail | | | $ 2,457,560 |
| Ratio of Cost to retail ($5,246,332 ÷ $10,089,100) × 100 | | | 52.00% |
| Ending inventory at cost | | | $ 1,277,931 |

2.

Ceabane Ltd.
Income Statement
for the Six Months ending June 30, 2024

| | |
|---|---|
| Sales | $ 7,693,980 |
| Less: Sales returns and allowances | 62,440 |
| Net sales | 7,631,540 |
| Cost of goods sold* | 3,968,401 |
| Gross profit from sales | 3,663,139 |
| Operating expenses | |
| Total operating expenses | 1,500,000 |
| Income before tax | 2,163,139 |
| Income tax expense | 648,942 |
| Net income | $ 1,514,197 |

* $5,246,332 − 1,277,931 = 3,968,401

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**PROBLEM 6–9**

1. Ending inventory for 2023 was overstated by $2,000. Thus, cost of goods sold should have been $2,000 higher, or $22,000 and gross profit $2,000 lower, or $28,000. Because of this mistake, the 2024 opening inventory was also overstated by $2,000, causing cost of goods sold to be overstated by $2,000 and gross profit to be understated by $2,000. Gross profit should have been $29,000.

2. 2023 total and net assets were overstated by $2,000. 2024 total assets and net assets were correct.

**PROBLEM 6–10**

| | *2022* | | | *2023* | | |
|---|---|---|---|---|---|---|
| | *Cost* | *Market* | *Unit Basis (LCNRV)* | *Cost* | *Market* | *Unit Basis (LCNRV)* |
| Product X | $14,000 | $15,000 | $14,000 | $15,000 | $16,000 | $15,000 |
| Product Y | 12,500 | 12,000 | 12,000 | 12,000 | 11,500 | 11,500 |
| Product Z | 11,000 | 11,500 | 11,000 | 10,500 | 10,000 | 10,000 |
| Total | $37,500 | $38,500 | $37,000 | $37,500 | $37,500 | $36,500 |

## Chapter 7 Solutions

**PROBLEM 7–1**

| | |
|---|---|
| a | The company has received a $3,000 loan from the bank, that was deposited into its bank account but was not recorded in the books of the company. |
| e | A $250 cheque was not returned with the bank statement though it was paid by the bank. |
| d | Cheques amounting to $4,290 shown as outstanding on the November reconciliation still have not been returned by the bank. |
| a | A collection of a note receivable for $1,000 made by the bank has not been previously reported to Goertzen. This includes interest earned of $50. |
| c | The bank has erroneously charged Goertzen with an $1,100 cheque which should have been charged to Gagetown Ltd. |
| b | A $350 cheque made out by Fynn Company and deposited by Goertzen has been returned by the bank marked NSF; this is the first knowledge Goertzen has of this action. |
| a | A cheque for $840 was erroneously recorded as $730 in the company records. |
| c | A $600 bank deposit of December 31 does not appear on the bank statement. |
| b | Bank service charges amounting to $75 were deducted from the bank statement but not yet from the company records. |

## PROBLEM 7–2

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Aug 2 | Petty cash | | 500 | |
| | Cash | | | 500 |
| | To establish a petty cash fund for $200. | | | |
| Aug 15 | Merchandise inventory | | 20.00 | |
| | Office supplies expense | | 35.00 | |
| | Delivery expenses | | 32.00 | |
| | Travel expenses | | 139.60 | |
| | Employee recognition expense | | 80.00 | |
| | Postage | | 145.00 | |
| | Petty cash | | 300.00 | |
| | Cash over/short | | | 1.60 |
| | Cash | | | 750.00 |
| | To replenish petty cash and increase it to $800. | | | |
| Aug 31 | Travel expenses | | 75.80 | |
| | Shop supplies | | 300.00 | |
| | Delivery expense | | 56.00 | |
| | Maintenance expense | | 345.00 | |
| | Cash over/short | | 1.80 | |
| | Cash | | | 778.60 |
| | To replenish petty cash. | | | |

## PROBLEM 7–3

1.

| | | | | |
|---|---|---|---|---|
| Bank balance, November 30 | | $30,000 | Book balance | $35,598 |
| Bank error on cheque 20 | | 5 | Add: Collection of note | 200 |
| | | | Less: NSF cheque from customer | 1,475 |
| Plus: Outstanding deposits | | 4,500 | | |
| | | | Less: Service charges | 20 |
| | | | Service charges | 25 |
| Less: Outstanding cheques | | | Service charges | 18 |
| Chq 236 | $230 | | | |
| Chq 240 | 15 | 245 | | |
| | | $34,260 | | $34,260 |

2.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Nov 30 | Bank service charges expense . . . . . | | 63 | |
| | Accounts receivable . . . . . | | 1,475 | |
| | Note receivable . . . . . | | | 200 |
| | Cash . . . . . | | | 1,338 |
| | To record entries from November 2023 bank reconciliation. | | | |

---

**PROBLEM 7–4**

1. (a) Entry to record the write-off of $25,000:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Allowance for Doubtful Accounts . . . . . | | 25,000 | |
| | Accounts Receivable . . . . . | | | 25,000 |

(b) Entry to record the recovery of $15,000:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Accounts Receivable . . . . . | | 15,000 | |
| | Allowance for Doubtful Accounts . . . . . | | | 15,000 |
| | Cash . . . . . | | 15,000 | |
| | Accounts Receivable . . . . . | | | 15,000 |

2. Allowance for doubtful accounts = ($15,000 Cr. $-$ $25,000 Dr.) (1a) $+$ $15,000 Cr. (1b) $=$ $5,000 Cr. balance

3. (a) The entries required for bad debts based on three per cent of credit sales:

$$\begin{aligned} \text{Balance required} &= 3\% \text{ of credit sales} \\ &= 3\% \times 70\% \times \$1{,}000{,}000 \\ &= \$21{,}000 \end{aligned}$$

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Bad Debt Expense . . . . . | | 21,000 | |
| | Allowance for Doubtful Accounts . . . . . | | | 21,000 |
| | To record bad debts using % of sales, the income statement method. | | | |

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Bad Debt Expense . . . . . | | 7,500 | |
| | Allowance for Doubtful Accounts . . . . . | | | 7,500 |
| | To record bad debts using simplified balance sheet approach: 5% of receivables (250,000 × 5% = 12,500 required balance − 5,000 unadjusted balance = 7,500 required adjustment). | | | |

(b)

(c) Calculation of uncollectible amount at December 31, 2023:

| *Age (days)* | *Accounts Receivable* | *Estimated Loss Percentage* | *Estimated Uncollectible Amount* |
|---|---|---|---|
| 1-30 | $100,000 | 2% | $2,000 |
| 31-60 | 50,000 | 4% | 2,000 |
| 61-90 | 25,000 | 5% | 1,250 |
| 91-120 | 60,000 | 10% | 6,000 |
| Over 120 | 15,000 | 50% | 7,500 |
| | $250,000 | | $18,750 |

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Bad Debt Expense . . . . . | | 13,750 | |
| | Allowance for Doubtful Accounts . . . . . | | | 13,750 |
| | To record bad debts using aging analysis, a balance sheet approach (18,750 required balance − 5,000 unadjusted balance = 13,750 required adjustment). | | | |

4. (a) December 31, 2023 adjusted AFDA balance = $26,000 (calculated as 5,000 unadjusted balance + 21,000 adjustment)

   (b) December 31, 2023 adjusted AFDA balance = $12,500 (calculated as 5,000 unadjusted balance + 7,500 adjustment)

   (c) December 31, 2023 adjusted AFDA balance = $18,750 (calculated as 5,000 unadjusted balance + 13,750 adjustment)

---

**PROBLEM 7–5**

1.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Dec 31, 2022 | Bad Debt Expense | | 5,000 | |
| | Allowance for Doubtful Accounts | | | 5,000 |
| Apr 15, 2023 | Allowance for Doubtful Accounts | | 700 | |
| | Accounts Receivable | | | 700 |
| Aug 8, 2023 | Allowance for Doubtful Accounts | | 3,000 | |
| | Accounts Receivable | | | 3,000 |
| Dec 31, 2023 | Bad Debt Expense | | 4,000 | |
| | Allowance for Doubtful Accounts | | | 4,000 |
| Mar 6, 2024 | Accounts Receivable | | 200 | |
| | Allowance for Doubtful Accounts | | | 200 |
| Sep 4, 2024 | Allowance for Doubtful Accounts | | 4,000 | |
| | Accounts Receivable | | | 4,000 |
| Dec 31, 2024 | Bad Debt Expense | | 4,500 | |
| | Allowance for Doubtful Accounts | | | 4,500 |

2. Both methods are estimates and attempt to match expenses with revenues. Over time, the allowance for doubtful accounts under either method should be approximately the same. If not, management should review the percentage estimates under each method to ensure that they are reasonable.

---

**PROBLEM 7–6**

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Dec 31 | Allowance for doubtful accounts | | 1,000 | |
| | Accounts receivable | | | 1,000 |
| | 1. To record uncollectible account. | | | |
| Dec 31 | Bad debt expense | | 14,560 | |
| | Allowance for doubtful accounts | | | 14,560 |
| | 2. To record year-end adjusting entry for estimated uncollectible accounts. ($750,000 − 22,000) × 2% | | | |
| Dec 31 | Bad debt expense | | 6,760 | |
| | Allowance for doubtful accounts | | | 6,760 |
| | 3. To record year-end adjusting entry for estimated uncollectible accounts. ($100,000 − 1,000) × 4% = $3,960 credit (AFDA $1,800 debit − $1,000) + 3,960 = $5,760 | | | |

4. For entry from part (2):

| | | |
|---|---|---|
| Accounts receivable | $ 99,000 | |
| Allowance for doubtful accounts ($1,800 + 1,000 − 14,560) | (11,760) | $87,240 |

Note that no attempt is made to reconcile the AFDA balance to the estimated bad debt amount when using the income statement method.

For entry from part (3):

| | | |
|---|---|---|
| Accounts receivable | $99,000 | |
| Allowance for doubtful accounts ($1,800 + 1,000 − 6,760) | (3,960) | $95,040 |

Note that the AFDA balance is adjusted so that its ending balance is equal to the estimated bad debt amount when using the balance sheet method.

---

**PROBLEM 7–7**

1.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Dec 12, 2022 | Note receivable | | 20,500 | |
| | Accounts receivable | | | 20,500 |
| | To accept a note receivable in exchange for an overdue accounts receivable. | | | |
| Dec 31, 2022 | Interest receivable | | 53 | |
| | Interest revenue | | | 53 |
| | To record accrued interest on the Dec 12 note receivable. ($20,500 × 5% × 19 ÷ 365) | | | |
| Dec 31, 2022 | Interest revenue | | 53 | |
| | Income summary | | | 53 |
| | To record the closing entry for interest revenue to Income Summary. | | | |
| Jan 12, 2023 | Cash | | 20,584 | |
| | Note receivable | | | 20,500 |
| | Interest receivable | | | 53 |
| | Interest income | | | 31 |
| | To record payment of note receivable. ($20,500 × 5% × 30 ÷ 365) + $20,500 | | | |

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jan 14, 2023 | Note receivable | | 12,000 | |
| | Cost of goods sold | | 7,500 | |
| | Sales | | | 12,000 |
| | Merchandise inventory | | | 7,500 |
| | To record receipt of note receivable for a merchandise inventory sale according to company credit policy. | | | |
| Jan 31, 2023 | Interest receivable | | 34 | |
| | Interest income | | | 34 |
| | To record accrued interest on the Jan 14 note receivable. ($12,000 × 6% × 17 ÷ 365) | | | |
| Feb 10, 2023 | Note receivable | | 6,600 | |
| | Accounts receivable | | | 6,600 |
| | To accept a note receivable in exchange for an overdue accounts receivable. | | | |
| Feb 28, 2023 | Interest receivable | | 55 | |
| | Interest income | | | 55 |
| | To record accrued interest on the Jan 14 and Feb 10 notes receivable. ($12,000 × 6% × 28 ÷ 365) + ($6,600 × 9% × 18 ÷ 365) | | | |
| Mar 15, 2023 | Cash | | 12,118 | |
| | Note receivable | | | 12,000 |
| | Interest receivable | | | 89 |
| | Interest income | | | 29 |
| | To record payment of note receivable. ($12,000 × 6% × 60 ÷ 365) + $12,000 | | | |

To compute the March 15 date:

| | |
|---|---|
| Jan | 31 days |
| Note date | (14) |
| Feb | 28 days |
| Mar 15 | 15 days = 60 days on this date |

2. Maturity date of the Feb 10 note receivable:

| | |
|---|---|
| Feb | 28 days |
| Note date | (10) |
| Subtotal | 18 days in Feb. |
| Mar | 31 days |
| Apr | 30 days |
| May 11 | 11 days = 90 days on this date |

May 11, 2023 will be the maturity date for the February 10 note receivable.

**PROBLEM 7–8**

1.

| | Note (a) | | Note (b) | Note (c) | | Note (d) |
|---|---|---|---|---|---|---|
| Total number of days in the month when the note was signed | Jan 1 | 31 days | | Jun | 30 days | |
| Less: Note date | | (15) | | | (21) | |
| Subtotal | | 16 days | | | 9 days | |
| Next month total days | Dec | 31 days | | Jul | 31 days | |
| Next month total days | Jan | 31 days | | Aug | 5 days | |
| Next month total days | Feb | 28 days | | | | |
| Next month total days | Mar | 31 days | | | | |
| Next month total days | Apr | 30 days | | | | |
| Date in month to equal term in days | May | 13 days | | | | |
| Total number of days of the note term | | 180 days | | | 45 days | |
| Total number of months | | | 3 months | | | 4 months |
| Maturity date | May 13, 2022 | | Apr 6, 2022 | Aug 5, 2022 | | April 11, 2023 |

2. Note (a) accrued interest from Jan 1 to Dec 31, 2022:

   $\$260{,}000 \times 4\% \times 180 \div 365 = \$5{,}129$

   Note (b) accrued interest from Jan 15 to Dec 31, 2022:

   $\$180{,}000 \times 5\% \times 3 \div 12 = \$2{,}250$

   Note (c) accrued interest from Jun 21 to Dec 31, 2022:

   $\$40{,}000 \times 5.5\% \times 45 \div 365 = \$271$

   Note (d) accrued interest from Dec 1 to Dec 31, 2022:

   $\$60{,}000 \times 6.5\% \times 1 \div 12 = \$325$

3. Note (a) cash payment amount collected at maturity:

   $\$260{,}000 \times 4\% \times 180 \div 365 = \$5{,}129 + \$260{,}000 = \$265{,}129$ principal and interest

   Note (b) cash payment amount collected at maturity:

   $\$180{,}000 \times 5\% \times 3 \div 12 = \$2{,}250 + 180{,}000 = \$182{,}250$ principal and interest

   Note (c) cash payment amount collected at maturity:

   $\$40{,}000 \times 5.5\% \times 45 \div 365 = \$271 + 40{,}000 = \$40{,}271$ principal and interest

   Note (d) cash payment amount collected at maturity:

   $\$60{,}000 \times 6.5\% \times 4 \div 12 = \$1{,}300 + 60{,}000 = \$61{,}300$ principal and interest

**PROBLEM 7–9**

1. Net sales: $\$250{,}000 - 52{,}000 - 5{,}000 = 193{,}000$

   Average accounts receivable: $(\$53{,}000 + 22{,}000) \div 2 = \$37{,}500$

   Accounts receivable turnover $(193{,}000 \div 37{,}500) = 5.15$ times per year

2. If the turnover ratio from the previous year was 5.25 times per year, the company is not as efficient at collecting its accounts receivable in 2023 compared to the previous year.

## Chapter 8 Solutions

---

**PROBLEM 8–1**

| | | | |
|---|---|---|---|
| *Cost of Lots:* | | | |
| Cheque to Jones | | | $140,000 |
| Bank loan assumed by Arrow | | | 100,000 |
| Razing of barns | | | 6,000 |
| Legal, accounting, and brokerage Fees | | | 20,000 |
| Clearing and levelling costs | | | 10,000 |
| Total outlays | | | $276,000 |
| *Less*: Contra items: | | | |
| Proceeds from crops | | $6,000 | |
| Proceeds from house | | 1,600 | |
| Proceeds from lumber | | 4,400 | 12,000 |
| Net cost of 500 lots | | | $264,000 |
| Net cost per lot ($264,000/500 lots) | | | $528 |

---

**PROBLEM 8–2**

1. (a) Units of Production: $\frac{(\$30{,}000 - 8{,}000)}{80{,}000 \text{ units}} \times 15{,}000 \text{ units} = \$4{,}125$

   Note: The half-year rule does not apply to this method.

   (b) Straight-line: $\frac{(\$30{,}000 - 8{,}000)}{6 \text{ years}} \times 50\% = \$1{,}833$

   (c) Double-declining balance: $\$30{,}000 \times 33\%^* \times 50\% = \$4{,}950$

   * 2/6 = 33% DDB rate

2. Carrying amounts at the end of 2021:

   Carrying amount = Cost − accumulated depreciation

| | | |
|---|---|---|
| Units of production: | | |
| Cost | | $30,000 |
| Accumulated depreciation | (4,125) | $25,075 |
| Straight-line: | | |
| Cost | | $30,000 |
| Accumulated depreciation | (1,833) | $28,167 |
| Double declining balance: | | |
| Cost | | $30,000 |
| Accumulated depreciation | (4,950) | $25,050 |

3. The double-decline balance method resulted in the highest depreciation expense and lowest net income for 2021.

4. Depreciation for 2022:

   (a) Units of Production: $\frac{(\$30{,}000 - 8{,}000)}{80{,}000 \text{ units}} \times 25{,}000 \text{ units} = \$6{,}875$

   (b) Straight-line: $\frac{(\$30{,}000 - 8{,}000)}{6 \text{ years}} = \$3{,}667$

   (c) Double-declining balance: $(\$30{,}000 - \$4{,}950) \times 33\% = \$8{,}267$

   Double-declining balance method resulted in the highest depreciation expense and lowest net income for 2022.

---

**PROBLEM 8–3**

1. Depreciation expense for each of 2023 through to 2026 inclusive:

$$\text{Depreciation/unit} = \frac{\text{Cost} - \text{Residual}}{\text{Expected Total Production}} = \frac{\$95{,}000 - \$5{,}000}{9{,}000 \text{ units}} = \$10/\text{unit}$$

| *Year* | *Actual Units Produced* | *Depreciation Expense* | *Calculations* |
|---|---|---|---|
| 2023 | 2,000 | $20,000 | 2,000 units × $10/unit = 20,000 |
| 2024 | 3,000 | 30,000 | 3,000 units × $10/unit = 30,000 |
| 2025 | 2,800 | 28,000 | 2,800 units × $10/unit = 28,000 |
| 2026 | 2,900 | 12,000 | 1,200 units × $10/unit = 12,000* |
| | | $90,000 | Total depreciation |

* Maximum allowable total depreciation is Cost-Residual or $90,000. This is based on a total of 9,000 units. Therefore, the maximum amount of depreciation that can be recorded in 2026 is $12,000 which is based on 1,200 units.

2. Accumulated depreciation at the end of 2026 is $90,000.
3. Carrying amount of the machine at the end of 2026 is $5,000 ($95,000 − 90,000).
4. Entry on January 15, 2027 to record the sale of the machinery for $12,000:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Cash | | 12,000 | |
| | Accumulated Depreciation | | 90,000 | |
| | Machinery | | | 95,000 |
| | Gain on Disposal | | | 7,000 |
| | To record gain on disposal calculated as: [$95,000 Cost of Machinery − $90,000 Accumulated Depreciation = $5,000 Carrying Amount (or net book value)] − $12,000 Proceeds of Disposal = $(7,000) | | | |

---

**PROBLEM 8–4**

1. Asset cost:

| | |
|---|---|
| Purchase of machinery | $35,000 |
| Transportation charges | 1,200 |
| Installation charge | 5,700 |
| | 31,900 |

Note: Minor repairs are expensed.

2. Straight-line depreciation for each year for 4 years:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Depreciation Expense | | 5,975 | |
| | Accumulated Depreciation – Machine ($31,900 − 8,000) ÷ 4 years | | | 5,975 |

Declining balance method:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| 2021 | Depreciation Expense ..... | | 7,975 | |
| | Accumulated Depreciation..... | | | 7,975 |
| | 2/4 = 25% rate , ($31,900 × 25%) | | | |
| 2022 | Depreciation Expense ..... | | 5,981 | |
| | Accumulated Depreciation..... | | | 5,981 |
| | ($31,900 − 7,975) × 25% | | | |
| 2023 | Depreciation Expense ..... | | 4,486 | |
| | Accumulated Depreciation..... | | | 4,486 |
| | ($31,900 − 7,975 − 5,981) × 25% | | | |
| 2024 | Depreciation Expense ..... | | 3,365 | |
| | Accumulated Depreciation..... | | | 3,365 |
| | ($31,900 − 7,975 − 5,981 − 4,486) × 25% | | | |
| 2025 | Depreciation Expense ..... | | 2,093 | |
| | Accumulated Depreciation..... | | | 2,093 |
| | ($31,900 − 7,975 − 5,981 − 4,486 − 3,365) × 25% = $2,523 | | | |

Note: Only $2,093 of depreciation can be expensed to ensure that the carrying amount remains equal to the residual value of $8,000.

3.

| | |
|---|---|
| Asset cost, 2021 | $ 31,900 |
| Depreciation expense for 3 years (2021, 2022, 2023) | (17,925) |
| Depreciable amount for remaining four years | $ 13,975 |

Revised depreciation = (13,975 − 2,000) ÷ (5 − 3) = $5,988

Annual depreciation for the remaining two years = $5,988 per year

---

**PROBLEM 8–5**

1.

| | |
|---|---|
| 2015 depreciation ($115,000 − 17,250 ÷ 30 × 50%) | $ 288 |
| 2016-2021 deprecation ($115,000 − 17,250) ÷ 30 × 6 years | 19,550 |
| Total depreciation to Dec 31, 2021 | $19,838 |

| | |
|---|---|
| Cost | $115,000 |
| *Less:* Accumulated depreciation | (19,838) |
| Carrying amount (Dec 31, 2021) | $ 95,162 |

2. Revised depreciation for 2022: $(\$95{,}162 - 18{,}000) \div 15$ years remaining $= \$5{,}144$

   Entry:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Dec 31, 2022 | Depreciation Expense | | 5,144 | |
| | Accumulated Depreciation | | | 5,144 |
| | To record depreciation for 2022. | | | |

3.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| July 31, 2023 | Depreciation Expense | | 2,572 | |
| | Accumulated Depreciation | | | 2,572 |
| | To record depreciation to date of disposal: ($5,144 × 50%). | | | |
| July 31, 2023 | Cash | | 80,000 | |
| | Accumulated Depreciation – Machine ($19,838 + 5,144 + 2,572) | | 27,554 | |
| | Loss on Disposal | | 7,446 | |
| | Machine | | | 115,000 |
| | To record sale of asset. | | | |

---

**PROBLEM 8–6**

1.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Aug 1, 2022 | Equipment | | 250,000 | |
| | Cash | | | 250,000 |
| | To record the purchase of equipment. | | | |

2.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| 2022 | Depreciation Expense . . . . . | | 11,550 | |
| | Accumulated Depreciation . . . . . | | | 11,550 |
| | ($250,000 − 40,000) ÷ 200,000 × 11,000) | | | |
| 2023 | Depreciation Expense . . . . . | | 26,250 | |
| | Accumulated Depreciation . . . . . | | | 26,250 |
| | ($250,000 − 40,000) ÷ 200,000 × 25,000) | | | |
| 2024 | Depreciation Expense . . . . . | | 36,750 | |
| | Accumulated Depreciation . . . . . | | | 36,750 |
| | ($250,000 − 40,000) ÷ 200,000 × 35,000) | | | |

3.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jan 1, 2021 | New asset* . . . . . | | 170,000 | |
| | Accum depreciation – Old asset . . . . . | | 74,550 | |
| | Loss on disposal . . . . . | | 35,450 | |
| | Old asset . . . . . | | | 250,000 |
| | Cash . . . . . | | | 30,000 |
| | To record the trade-in of the old asset for a new asset. | | | |

* Trade-in of asset:
Value of new asset = cash paid + fair value of asset traded (given up) = $30,000 + $140,000 = $170,000

---

**PROBLEM 8–7**

1.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jan 1, 2022 | Land . . . . . | | 150,000 | |
| | Buildings . . . . . | | 400,000 | |
| | Patents . . . . . | | 200,000 | |
| | Machinery . . . . . | | 150,000 | |
| | Goodwill . . . . . | | 100,000 | |
| | Cash . . . . . | | | 1,000,000 |
| | To record purchase of Zak Company assets. | | | |

2. For the impairment loss:

Carrying amount January 1, 2024:

$(\$200{,}000 - 0) \div 20 \text{ years} = 10{,}000 \text{ per year} \div 2 \text{ years} = \$20{,}000$

$\$200{,}000 - 20{,}000 = \$180{,}000$

Recoverable amount is 165,000, therefore there is an impairment.

Impairment amount: $15,000

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jan 1, 2024 | Loss on impairment of patents . . . . . | | 15,000 | |
| | Patents . . . . . | | | 15,000 |

3. Amortization:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Amortization expense . . . . . | | 9,167 | |
| | Accumulated amortization, patents . . . | | | 9,167 |
| | ($165,000* − 0) ÷ (20 − 2) | | | |

* Note: When an impairment occurs, the new carrying amount will be the recoverable amount.

4.

Teldor Ltd.
Balance Sheet
At December 31, 2024

| | | |
|---|---|---|
| Intangible assets: | | |
| Patents | $165,000 | |
| Accumulated amortization | (29,167) | $135,833 |
| Total intangible assets | | 235,833 |

Disclosure:

Patents were purchased on January 1, 2022 for $200,000. Their useful life is estimated to be 20 years and amortized on a straight-line basis. In 2024, patents were written down to $165,000 based on their recoverable amount at that date.

Note: Goodwill is not reported as an intangible asset.

---

**PROBLEM 8–8**

1.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jan 31, 2022 | Computer | | 3,000 | |
| | Cash | | | 3,000 |
| Mar 1, 2022 | Computer | | 1,000 | |
| | Cash | | | 1,000 |
| Apr 1, 2023 | Computer | | 2,000 | |
| | Cash | | | 2,000 |

Alternate interpretations are acceptable, with adequate explanation.

2.

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Dec 31, 2022 | Depreciation Expense | | 667 | |
| | Accumulated Depreciation – Equipment | | | 667 |
| | To record 2022 depreciation: ($3,000 + 1,000) × 1/3 years × 50%). | | | |
| Dec 31, 2023 | Depreciation Expense | | 2,667 | |
| | Accumulated Depreciation – Equipment | | | 2,667 |
| | To record 2023 depreciation: ($3,000 + 1,000 + 2,000 − 667) × 50%) | | | |

# Chapter 9 Solutions

---

**PROBLEM 9–1**

1. (a) Entry to record receipt of loan proceeds from the bank:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Dec. 31 | Cash | | 100,000 | |
| | Loan Payable | | | 100,000 |
| | To record loan from First National Bank. | | | |

(b) Entry to record purchase of the equipment:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Jan. 2 | Equipment . . . . . | | 95,000 | |
| | Cash . . . . . | | | 95,000 |
| | To record purchase of equipment. | | | |

2. The loan repayment schedule is as follows:

Zinc Corp.
Loan Repayment Schedule

| | *A* | *B* | *C* | *D* | *E* |
|---|---|---|---|---|---|
| | | | *(D − B)* | | *(A − C)* |
| *Year Ended Dec. 31* | *Beginning Loan Balance* | *(A × 8%) Interest Expense* | *Reduction of Loan Payable* | *Total Loan Payment* | *Ending Loan Balance* |
| 2024 | $100,000 | $8,000 | $22,192 | $30,192 | $77,808 |
| 2025 | 77,808 | 6,225 | 23,967 | 30,192 | 53,841 |
| 2026 | 53,841 | 4,307 | 25,885 | 30,192 | 27,956 |
| 2027 | 27,956 | 2,236 | 27,956 | 30,192 | -0- |

3. Entry to record the last loan payment:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Dec. 31 | Interest Expense . . . . . | | 2,236 | |
| | Loan Payable . . . . . | | 27,956 | |
| | Cash . . . . . | | | 30,192 |
| | To record final loan payment to First National Bank. | | | |

4. The partial balance sheet is as follows:

Zinc Corp.
Partial Balance Sheet
At December 31, 2025

*Liabilities*

| | |
|---|---|
| Current | |
| Current Portion of First National Bank Loan (Note X) | $25,885 |
| Non-current | |
| First National Bank Loan (Note X) | 27,956 |

Note X would disclose pertinent information including details of the loan repayment agreement (for example, interest rate, repayment terms, security) if just the carry amount is shown on the balance sheet as above.

# Chapter 10 Solutions

---

**PROBLEM 10–1**

1. The equity section of the balance sheet after the split is as follows:

| **Before split** | | **After split** | |
|---|---|---|---|
| *Equity* | | *Equity* | |
| Common Shares | | Common Shares | |
| Authorized – 5,000 Shares | | Authorized – 5,000 Shares | |
| Issued and Outstanding – 1,000 Shares | $100,000 | Issued and Outstanding – 5,000 Shares | $100,000 |

2. Memorandum indicating the new number of shares:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Memorandum<br>The outstanding shares were increased from 1,000 to 5,000 by a 5-for-1 share split. | | | |

3. It can be estimated that the market price per share would approximate $8 ($40/5). However, the share split should not have any effect on the overall value of the firm to investors. Therefore, if five times as many shares are now outstanding, each share should be worth 1/5 as much but each shareholder's paid-in capital would be the same before and after the share split.

---

**PROBLEM 10–2**

1. General journal to record 2023 transactions:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Feb. 15 | Cash Dividends Declared* . . . . . | | 112 | |
| | Dividends Payable – Preferred Shares . | | | 12 |
| | Dividends Payable – Common Shares . | | | 100 |
| Apr. 1 | Dividends Payable – Preferred Shares . . . . | | 12 | |
| | Dividends Payable – Common Shares . . . . | | 100 | |
| | Cash . . . . . | | | 112 |
| May 1 | Share Dividends Declared* . . . . . | | 400 | |
| | Share Dividends to be Distributed . . . . | | | 400 |
| | (2,000 shares × 10% = 200 shares × $2) | | | |
| Jun. 15 | Share Dividends to be Distributed . . . . . | | 400 | |
| | Common Shares . . . . . | | | 400 |
| Aug. 15 | Cash Dividends Declared* . . . . . | | 122 | |
| | Dividends Payable – Preferred Shares . | | | 12 |
| | Dividends Payable – Common Shares | | | 110 |
| | (2,200 shares × $0.05) . . . . . | | | |
| Oct. 1 | Dividends Payable – Preferred Shares . . . . | | 12 | |
| | Dividends Payable – Common Shares . . . . | | 110 | |
| | Cash . . . . . | | | 122 |
| Dec. 15 | Share Dividends Declared* . . . . . | | 660 | |
| | Share Dividends to be Distributed . . . . | | | 660 |
| | (2,200 shares × 10% × $3 = $660) | | | |
| 27 | Share Dividends to be Distributed . . . . . | | 660 | |
| | Common Shares . . . . . | | | 660 |
| 31 | Income Summary . . . . . | | 1,400 | |
| | Retained Earnings . . . . . | | | 1,400 |
| 31 | Retained Earnings** . . . . . | | 1,294 | |
| | Share Dividends Declared . . . . . | | | 1,060 |
| | Cash Dividends Declared . . . . . | | | 234 |

* Alternatively, Retained Earnings could have been debited.

**If Retained Earnings was debited on the dividend declaration dates, then a closing entry is not required.

2. The statement of changes is as follows:

TWR Contracting Inc.
Statement of Changes in Equity
For the Year Ended December 31, 2023

| | *Share Capital* | | *Retained Earnings* | *Total Equity* |
|---|---|---|---|---|
| | *Common* | *Preferred* | | |
| Opening Balance | $2,000 | $400 | $ 900 | $ 3,300 |
| Net Income | | | 1,400 | 1,400 |
| Dividends Declared | | | | |
| Cash | | | (234) | (234) |
| Common Shares | 1,060 | | (1,060) | |
| Ending Balance | $3,060 | $400 | $ 1,006 | $ 4,466 |

**PROBLEM 10–3**

1. General journal to record 2023 transactions:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| Feb. 10 | Cash Dividends Declared* . . . . . | | 32,000 | |
| | Dividends Payable – Preferred Shares . | | | 30,000 |
| | Dividends Payable – Common Shares . | | | 2,000 |
| | To record dividend declaration; $15,000 in arrears to Preferred + $15,000 to Preferred for 2023 leaves remainder of $2,000 for Common. | | | |
| Mar. 1 | Dividends Payable – Preferred Shares . . . . | | 30,000 | |
| | Dividends Payable – Common Shares . . . . | | 2,000 | |
| | Cash . . . . . | | | 32,000 |
| | To record payment of dividends declared February 10. | | | |
| 5 | Cash . . . . . | | 36,000 | |
| | Preferred Shares . . . . . | | | 36,000 |
| | To record issuance of 2,000 preferred shares at $18 each. | | | |
| | Memorandum Entry: Board of Directors declared a 2:1 split on preferred and common shares: | | | |
| | Preferred Shares – (30,000 shares + 2,000 shares) × 2 = 64,000 | | | |
| | Common Shares – 70,000 × 2 = 140,000 | | | |
| Jun. 22 | Cash . . . . . | | 80,000 | |
| | Common Shares . . . . . | | | 80,000 |
| | To record issuance of 20,000 common shares at $4 each. | | | |
| Nov. 10 | Share Dividends Declared* . . . . . | | 112,000 | |
| | Share Dividends to be Distributed . . . . | | | 112,000 |
| | To record share dividend; [20% × (140,000 + 20,000)] × $3.50. | | | |
| Dec. 15 | Share Dividends to be Distributed . . . . . | | 112,000 | |
| | Common Shares . . . . . | | | 112,000 |
| | To record distribution of common share dividend. | | | |
| 31 | Income Summary . . . . . | | 290,000 | |
| | Retained Earnings . . . . . | | | 290,000 |
| | To close the credit balance in the Income Summary account. | | | |
| 31 | Retained Earnings** . . . . . | | 144,000 | |
| | Cash Dividends Declared . . . . . | | | 32,000 |
| | Share Dividends Declared . . . . . | | | 112,000 |
| | To close the dividend accounts. | | | |

* Alternatively, Retained Earnings could have been debited.

** If Retained Earnings was debited on the dividend declaration dates, then a closing entry is not required.

2. The equity section of the balance sheet is as follows:

Wondra Inc.
Partial Balance Sheet
December 31, 2023

| | |
|---|---|
| Contributed Capital | |
| Preferred Shares; $0.50 cumulative; unlimited shares authorized; 64,000 shares issued and outstanding | $516,000 |
| Common Shares; unlimited shares authorized; 192,000 shares issued and outstanding | 752,000 |
| Total contributed capital | $1,268,000 |
| Retained Earnings | 241,000 |
| Total Equity | $1,509,000 |

Part 2 Calculations (using T-accounts to track changing account balances):

Preferred Shares

| | | |
|---|---|---|
| $480,000 | (30,000 shares) | Dec. 31/18 balance |
| 36,000 | (2,000 shares) | Mar. 5/19 |
| 0 | (32,000 shares) | Apr. 15/19 |
| $516,000 | (64,000 shares) | Dec. 31/19 balance |

Common Shares

| | | |
|---|---|---|
| $560,000 | (70,000 shares) | Dec. 31/18 balance |
| 0 | (70,000 shares) | Apr. 15/19 |
| 80,000 | (20,000 shares) | Jun. 22/19 |
| 112,000 | (32,000 shares) | Nov. 15/19 |
| $752,000 | (192,000 shares) | Dec. 31/19 balance |

Retained Earnings

| | | | |
|---|---|---|---|
| | | $95,000 | Dec. 31/18 balance |
| Dec. 31/19 | Cash Div. 32,000 | | |
| | Share Div. 112,000 | | |
| | | 290,000 | Dec. 31/19 |
| | | 241,000 | Dec. 31/19 balance |

**PROBLEM 10–4**

1. The paid-in capital per common share, and book value per common share are:

$$\text{Paid-in capital per common share} = \frac{\text{Total Paid-in Capital}}{\text{Number of shares outstanding}} = \$3{,}070/300 = \$10.23 \text{ (rounded)}$$

$$\text{Book value per common share} = \frac{\text{Total equity}}{\text{Number of shares outstanding}} = \$3{,}570/300 = \$11.90$$

2. There is little relationship between market price and the book value of a share. Book value provides only a basis on which to compare two or more companies, or to compare a company's market price per share. Market value is affected by investors' perceptions of future earnings expectations of the company. Also some assets recorded at historical cost, such as land, may have appreciated in value. This appreciation would be reflected in the market value of the common shares, but not in the book value.

## Chapter 11 Solutions

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**PROBLEM 11–1**

1. Entry to record the disposal:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Accumulated Depreciation . . . . . | | 16[1] | |
| | Cash . . . . . | | 12 | |
| | Equipment . . . . . | | | 20 |
| | Gain on Sale of Equipment . . . . . | | | 8 |

| | |
|---|---|
| Cost (given) | 20 |
| [1]Acc. Depreciation (derived) | (16) |
| Book Value or Carrying Amount (given) | 4 |
| Cash Proceeds (given) | (12) |
| Gain on Sale (given) | 8 |

Cash is increased by $12, the amount of the sale proceeds, but this does not represent cash flow from an operating activity. The sale of property, plant and equipment assets is an

investing activity, and so will not be shown in the calculation of cash flow from operating activities. The $12 inflow of cash from the sale of the equipment will be shown as a cash inflow in the Investing Activities section of the SCF.

The $8 gain on sale is included in the calculation of net income. Since it (a) does not represent actual cash inflow (the $12 is the actual cash inflow) and (b) is not an operating activity, the gain is deducted from net income on the SCF to derive cash flow from operating activities.

2. Cash flow from operating activities calculated as follows:

| | |
|---|---|
| Net Income | $33 |
| Items Not Affecting Cash Flow | |
| Depreciation Expense | 10 |
| Gain on Sale of Equipment | (8) |
| Cash Flow from Operating Activities | $35 |

---

**PROBLEM 11–2**

1. Beginning retained earnings + net income − dividends declared = Ending retained earnings; 156 + 50 − 0 = 206. No dividends were declared so the net change in retained earnings of 50 is entirely an operating activity – net income.

2. The cash flow from operating activities is calculating as follows:

| | *Balance* | | *Change* | | *Cash Effect* | | *Activity* |
|---|---|---|---|---|---|---|---|
| | *2023* | *2022* | | | | | |
| | *Dr. (Cr.)* | *Dr. (Cr.)* | *Dr.* | *Cr.* | *Inflow* | *Outflow* | |
| Cash | 100 | 86 | 14 | | To be explained | | C&CE |
| Accounts Receivable | 60 | 40 | 20 | | | 20 | Operating |
| Inventory | 36 | 30 | 6 | | | 6 | Operating |
| Prepaid Rent | 10 | -0- | 10 | | | 10 | Operating |
| Retained Earnings | (206) | (156) | | 50 | 50 | | Operating |
| | -0- | -0- | 50 | 50 | 50 | 36 | |

$14 net cash inflow

Cash flow from operating activities would be calculated as:

| | | |
|---|---|---|
| Net Income | | $ 50 |
| Adjustments to reconcile net income to cash provided by operating activities: | | |
| Increase in Accounts Receivable | (20) | |
| Increase in Inventory | (6) | |
| Increase in Prepaid Rent | (10) | (36) |
| Cash Flow from operating activities | | $ 14 |

---

**PROBLEM 11–3**

1. Entry to record the depreciation expense for the year:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Depreciation Expense . . . . . | | 100 | |
| | Accumulated Depreciation – Machinery . . . . . | | | 100 |

There is no cash effect. However, the depreciation expense should be added back to the net loss figure when deriving cash flow from operating activities because it is a non-cash expense.

2. Entry to account for the change in the Machinery balance sheet account:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Machinery . . . . . | | 300 | |
| | Cash . . . . . | | | 300 |

Since (a) the Machinery account increased $300 (500 − 200) during the year, (b) no disposals occurred, and (c) all purchases of machinery were paid in cash, $300 of cash must have been spent on machinery purchases. This cash outflow is an investing activity.

3. Cash flow table:

| | *Balance* | | *Change* | | *Cash Effect* | | *Activity* |
|---|---|---|---|---|---|---|---|
| | *2023* | *2022* | | | | | |
| | *Dr. (Cr.)* | *Dr. (Cr.)* | *Dr.* | *Cr.* | *Inflow* | *Outflow* | |
| Cash | 350 | 650 | | 300 | To be explained | | C&CE |
| Machinery | 500 | 200 | 300 | | | 300 | Investing |
| Accumulated Depreciation | (250) | (150) | | 100 | 100 | | Operating |
| Retained Earnings | (600) | (700) | 100 | | | 100 | Operating |
| | -0- | -0- | 400 | 400 | 100 | 400 | |

$300 net cash outflow

Statement of Cash Flows
For the Year Ended December 31, 2023

| | |
|---|---|
| *Cash flows from operating activities:* | |
| Net Loss | $(100) |
| Adjustments to reconcile net loss to cash provided by operating activities | |
| Depreciation Expense | 100 |
| Net cash flow from operating activities | -0- |
| *Cash flows from investing activities:* | |
| Purchase of Machinery | (300) |
| Net decrease in cash | (300) |
| Cash at beginning of year | 650 |
| Cash at end of year | $350 |

---

**PROBLEM 11–4**

1. Cash flow table:

| | *Balance* | | *Change* | | *Cash Effect* | | *Activity* |
|---|---|---|---|---|---|---|---|
| | *2023* | *2022* | | | | | |
| | *Dr. (Cr.)* | *Dr. (Cr.)* | *Dr.* | *Cr.* | *Inflow* | *Outflow* | |
| Cash | 1,350 | 1,800 | | *450 | To be explained | | C&CE |
| Borrowings | (800) | (1,300) | 500 | | | 500 | Financing |
| Retained Earnings | (550) | (500) | | 50 | 90 | | Operating |
| | | | | | | 40 | Financing |
| | -0- | -0- | 500 | 500 | 90 | 540 | |

*$450 net cash outflow

Cash flow from operating activities equals net income of $90. All revenue was received in cash and all expenses were paid in cash, and there were no changes to any other balance sheet accounts that affect cash flow from operating activities.

2. Dividends declared must have been $40, calculated as follows:

| | |
|---|---|
| Opening Retained Earnings (given) | $500 |
| *Add*: Net Income (given) | 90 |
| *Less*: Dividends Paid (derived) | **(40)** |
| Ending Retained Earnings (given) | $550 |

3. Cash Used by Financing Activities:

| | |
|---|---|
| Repayment of Borrowings | $(500) |
| Payment of Dividends | (40) |
| | $(540) |

---

**PROBLEM 11–5**

Calculations:

| | *Change* | | *Cash Effect* | | *Activity* |
|---|---|---|---|---|---|
| | *Dr.* | *Cr.* | *Inflow* | *Outflow* | |
| Cash | *1,175 | | To be explained | | C&CE |
| Accum. Dep'n. | | 120(b) | 120 | | Operating |
| Accounts Receivable | (d)40 | | | 40 | Operating |
| Merchandise Inventory | | 50(e) | 50 | | Operating |
| Accum. Amort – Patents | | 5(f) | 5 | | Operating |
| Wages Payable | | 20(c) | 20 | | Operating |
| Borrowings | (g)250 | | | 250 | Financing |
| Common Shares | | 500(h) | 500 | | Financing |
| Retained Earnings | | 800(a) | 800 | | Operating |
| | (i)30 | | | 30 | Financing |
| | 1,495 | 1,495 | 1,495 | 320 | |

*$1,175 net cash inflow

Dunn Corporation
Statement of Cash Flows
For the Year Ended December 31, 2023

| | | |
|---|---|---|
| *Cash flows from operating activities:* | | |
| Net Income | | $800 |
| Adjustments to reconcile net income to cash provided by operating activities | | |
| Increase in accounts receivable | | (40) |
| Decrease in merchandise inventory | | 50 |
| Increase in wages payable | | 20 |
| Depreciation and Amortization Expense ($120 + 5) | | 125 |
| Net cash inflow from operating activities | | 955 |
| *Cash flows from financing activities:* | | |
| Repayment of borrowings | $(250) | |
| Common shares issued | 500 | |
| Payment of dividends | (30) | |
| Net cash inflow from financing activities | | 220 |
| Net increase in cash | | 1,175 |
| Cash at beginning of year** | | 25 |
| Cash at End of Year | | $1,200 |

**If the company had $1,200 cash on hand at the end of the year and cash increased by $1,175 during the year, cash on hand at the beginning of the year must be $25.

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**PROBLEM 11–6**

Calculations:

| | *Change* | | *Cash Effect* | | *Activity* |
|---|---|---|---|---|---|
| | *Dr.* | *Cr.* | *Inflow* | *Outflow* | |
| Cash | 37,900[2] | | To be explained | | C&CE |
| Accounts Receivable | (c) 900 | | | 900 | Operating |
| Merchandise Inventory | | (d) 1,200 | 1,200 | | Operating |
| Equipment | (h) 10,000[5] | | | | Investing |
| Machinery | | (j) 15,000 | 6,000[3] | | Investing |
| | | | (j) 1,500 | | Operating |
| Accum. Dep'n. – Equipment | | (a) 3,000 | 3,000 | | Operating |
| Accum. Dep'n. – Machinery | (j) 7,500 | | | | |
| Accum. Amort – Patents | | (e) 100 | 100 | | Operating |
| Accounts Payable | (k) 1,000 | | | 1,000 | Operating |
| Wages Payable | | (b) 500 | 500 | | Operating |
| Dividends Payable | | (i) 5,000[4] | | | |
| Borrowings | (f) 5,000 | | | 5,000 | Financing |
| Common Shares | | (g) 12,500 | 12,500 | | Financing |
| | | (h) 10,000[5] | | | |
| Retained Earnings | | 20,000[1] | 20,000 | | Operating |
| | (i) 5,000[4] | | | | |
| | 67,300 | 67,300 | 44,800 | 6,900 | |

$37,900[2] net cash inflow

[1] Net income $= \$95{,}000 - 70{,}000 - 5{,}000 = \$20{,}000$

[2] Given

[3] Cost of machinery $15,000
Accumulated depreciation (1/2) (7,500)
Carrying amount 7,500
Cash proceeds (6,000)
Loss on disposal $1,500

The journal entry to record the sale would be:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Cash | | 6,000 (j) | |
| | Accumulated Dep'n. | | 7,500 | |
| | Loss on Sale | | 1,500 (j) | |
| | Machinery | | | 15,000 |

Items (a) and (b) affect the SCF. The first (j) is a cash inflow from investing activities. The second

(j) is added back to net income to arrive at cash flow from operating activities.

[4] Dividends were declared but not paid therefore there is no impact on cash.

[5] $10,000 of equipment was acquired by issuing common shares which is a non-cash transaction reported in a note but not included on the statement of cash flows.

1. The statement of cash flows is as follows:

Wheaton Co. Ltd.
Statement of Cash Flows
For the Year Ended December 31, 2023

| | | |
|---|---|---|
| *Cash flows from operating activities:* | | |
| Net income ($95,000 − 70,000 − 5,000) | | $ 20,000 |
| Adjustments to reconcile net income to cash provided by operating activities: | | |
| Depreciation and amortization ($3,000 + 100) | | 3,100 |
| Loss on Disposal of Machinery | | 1,500 |
| Increase in wages payable | | 500 |
| Increase in accounts receivable | | (900) |
| Decrease in merchandise inventory | | 1,200 |
| Decrease in accounts payable | | (1,000) |
| Net cash inflow from operating activities | | 24,400 |
| *Cash flows from investing activities:* | | |
| Proceeds from sale of machinery | $ 6,000 | |
| Net cash inflow from investing activities | | 6,000 |
| *Cash flows from financing activities:* | | |
| Repayment of borrowings | (5,000) | |
| Common shares issued for cash | 12,500 | |
| Net cash inflow from financing activities | | 7,500 |
| Net Increase in cash (given) | | 37,900 |
| Cash at beginning of year (given) | | 1,000 |
| Cash at end of year (derived) | | $ 38,900 |

2. The statement of cash flows shows that the company has financed its activities internally from operations and by issuing common shares. The sale of machinery also generated cash. It has repaid some borrowings and acquired some property, plant and equipment assets. Wheaton Co. Ltd. has generated substantially more cash than it has used in 2023.

# Chapter 12 Solutions

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**PROBLEM 12–1**

Belafonte Corporation
Balance Sheet
At April 30, 2023

| *Assets* | | | *Liabilities and Equity* | | |
|---|---|---|---|---|---|
| Cash | $ 2,000 | (c) | Accounts Payable | $ 8,000 | (f) |
| Accounts Receivable | 8,000 | (a) | Bonds Payable | 20,000 | (b) |
| Merchandise Inventories | 20,000 | (b) | Common Shares | 15,000 | (g) |
| Total Current Assets | 30,000 | (d) | Retained Earnings | 7,000 | (i) |
| Property, plant and equipment assets (net) | 20,000 | (b) | | | |
| Total Assets | $50,000 | (e) | Total Liabilities and Equity | $50,000 | (h) |

Information:

(1) Current assets = 3.75 × Current liabilities (accounts payable)

(2) Sales for year = $73,000

(3) Merchandise inventories = $20,000 = Property, plant and equipment assets = bonds payable

(4) Accounts receivable collection period = 40 days

$$\frac{\text{Average accounts receivable}}{\text{Net credit sales}} \times \text{365 days}$$

(5) Bonds payable = 10 × cash

(6) Total current assets = 2 × common shares.

Calculations:

(a) $\dfrac{\text{Average accounts receivable}}{\$73{,}000} \times \text{365 days} = \text{40 days}$

Average accounts receivable = $8,000

(b) Merchandise inventory, property, plant and equipment assets (net), and bonds payable each equal $20,000

(c) Cash = bonds payable/10 = $20,000/10 = $2,000

(d) Total current assets = $2,000 + 8,000 + 20,000 = $30,000

(e) Total assets = $20,000 + 30,000 = $50,000

(f) Accounts payable = Current assets/3.75 = $30,000/3.75 = $8,000

(g) Common shares = Current assets/2 = $30,000/2 = $15,000

(h) Total liabilities and equity must equal total assets

(i) Retained earnings = Total liabilities and equity − accounts payable − bonds payable − common shares = $50,000 − 8,000 − 20,000 − $15,000 = $7,000

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**PROBLEM 12–2**

Hook Limited
Balance Sheet
At December 31, 2023

| | | | | |
|---|---|---|---|---|
| | | *Assets* | | |
| Current | | | | |
| Cash | | | $ 30,000 | |
| Accounts Receivable | | | 150,000 | (3) |
| Merchandise Inventories | | | 90,000 | (4) |
| Total Current Assets | | | 270,000 | (2) |
| Property, Plant, and Equipment | 442,500 | (10) | | |
| *Less*: Accumulated Depreciation | 100,000 | | 342,500 | (9) |
| Total Assets | | | $612,500 | (8) |
| | | *Liabilities* | | |
| Current | | | | |
| Accounts Payable | $ 50,000 | | | |
| Accrued Liabilities | 70,000 | (1) | | |
| Total Current Liabilities | | | 120,000 | |
| Non-current | | | | |
| 8% Bonds Payable | | | 125,000 | (6) |
| | | | 245,000 | |
| | | *Equity* | | |
| Common Shares | 80,000 | (5) | | |
| Retained Earnings | 287,500 | (12) | 367,500 | |
| Total Liabilities and Equity | | | $612,500 | (11) |

Calculations:

(1) Accrued liabilities = $120,000 − 50,000 = $70,000

(Total current liabilities − accounts payable)

(2) Total current assets = $120,000 + 150,000 = $270,000

(Total current liabilities + working capital)

(3) Accounts receivable = ($120,000 × 1.5) − 30,000 = $150,000

[(Total current liabilities × acid-test ratio) − cash]

(4) Inventories = $270,000 − 150,000 − 30,000 = $90,000

(Total current assets − accounts receivable − cash)

(5) Net income = [$80,000 − (80,000/8)] − $30,000 = $40,000

[Income before interest and income taxes − (income before interest and income taxes/times interest earned) − income taxes

Therefore, common shares = $40,000/5 × $10 = $80,000

(Net income/Earnings per share) × issued value

(6) Bonds payable = $80,000/8 divided by 0.08% = $125,000

[Income before interest and income taxes/Times interest earned)/Interest rate]

(7) If the ratio of equity to total assets is 0.60 to 1, then the ratio of liabilities to total assets is 0.40 to 1.

(8) Total assets = ($120,000 + 125,000)/0.4 = $612,500

[(Total current liabilities + total non-current liabilities)/Total debt to total assets ratio]

(9) Net PPE = $612,500 − 270,000 = $342,500

(Total assets − current assets)

(10) PPE = $342,500 + 100,000 = $442,500

(Net PPE + accumulated depreciation)

(11) Total liabilities and equity = Total assets = $612,500.

(12) Retained earnings = $612,500 − 245,000 − 80,000 = $287,500

(Total liabilities and equity − total liabilities − common shares)

# Chapter 13 Solutions

## PROBLEM 13–1

1. Schedule to allocate the 2023 net income to partners:

| | *Bog* | *Cog* | *Fog* | *Total* |
|---|---|---|---|---|
| Profit to be allocated | | | | $40,000 |
| *Interest allocation:* | | | | |
| Bog: $60,000 × 10% | $ 6,000 | | | |
| Cog: $100,000 × 10% | | $ 10,000 | | (18,000) |
| Fog: $20,000 × 10% | | | $ 2,000 | |
| Balance | | | | 22,000 |
| *Salary allocation:* | 24,000 | 30,000 | 48,000 | (102,000) |
| Balance (deficit) | | | | (80,000) |
| *Balance allocated in profit and loss sharing ratio:* | | | | |
| Bog: ($80,000) × 5/10 | (40,000) | | | |
| Cog: ($80,000) × 3/10 | | (24,000) | | 80,000 |
| Fog: ($80,000 × 2/10 | | | (16,000) | |
| Balance | | | | $ -0- |
| Total allocated to partners | ($10,000) | $16,000 | $34,000 | |

2. Entry to record the division of the 2023 net income:

| General Journal | | | | |
|---|---|---|---|---|
| Date | Account/Explanation | PR | Debit | Credit |
| | Income Summary . . . . . | | 40,000 | |
| | Bog, Capital . . . . . | | 10,000 | |
| | Cog, Capital . . . . . | | | 16,000 |
| | Fog, Capital . . . . . | | | 34,000 |
| | To record net income allocation to partners. | | | |

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